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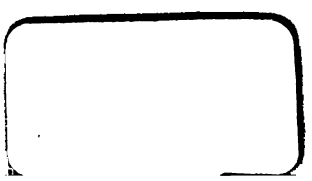

Section IV 7839

Astronomische Beobachtungen

auf der Sternwarte

der Königlichen Rheinischen Friedrich-Wilhelms-Universität

zu Bonn

angestellt und herausgegeben

von

Dr. Eduard Schönfeld,
Director der Sternwarte.

Achter Band.

Bonner Sternverzeichniss.

Vierte Section.

Bonn,
bei Adolph Marcus.
1886.

Bonner Sternverzeichniss

Vierte Section

enthaltend die genäherten mittleren Oerter für den Anfang des Jahres 1855 von 133659 Sternen zwischen 2 und 23 Grad südlicher Declination und 1173 diesen Grenzen benachbarten.

Auf der Sternwarte

der Königlichen Rheinischen Friedrich-Wilhelms-Universität

zu Bonn

beobachtet und berechnet

von

Dr. Eduard Schönfeld,
Director der Sternwarte.

Bonn,
bei Adolph Marcus.
1886.

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Dem Andenken Argelander's

gewidmet.

Einleitung.

1.

Das Bonner Sternverzeichniss, wie es in den Bänden 3 bis 5 der Bonner Beobachtungen enthalten ist, hat trotz der beschränkten Genauigkeit der in ihm vereinigten Sternpositionen die grösste Bedeutung gewonnen, ja es ist bei den verschiedensten Arbeiten den Astronomen ein unentbehrliches Hülfsmittel geworden. Um so lebhafter war, als ich im Herbst 1875 nach dem zwar in ehrwürdigem Alter, aber doch für die Wissenschaft viel zu früh erfolgten Tode meines Vorgängers und liebevollen Lehrers zur Leitung der hiesigen Sternwarte berufen wurde, der Wunsch, die Arbeit nach Süden fortzusetzen, so weit es die äusseren Verhältnisse gestatten möchten. Bekanntlich war der Wunsch oder die Absicht, Sternverzeichniss und Karten bis zum Wendekreis des Steinbocks oder gar bis zur Declination $-25°$ auszudehnen, auch Argelander nicht fremd gewesen. Aber die Schwierigkeit, die Südpartien der Arbeit den nördlichen gleichwerthig zu machen; die Befürchtung, dass die Unternehmung an der Klippe einer allzugrossen Ausdehnung scheitern könne; endlich die Hoffnung, dass sich bald eine Sternwarte der südlichen Halbkugel entschliessen werde, nach gleichem Plane eine Durchmusterung des südlichen Himmels auszuführen — alles dieses führte zu der Beschränkung auf den nördlichen Theil des Himmels bis zu $-2°$ Decl. Die letztere Hoffnung schien auch bald nach dem Abschluss der Bonner Arbeit der Verwirklichung nahe, die Schwierigkeiten der Ausführung scheinen sich aber doch als zu gross herausgestellt zu haben. Eine Theilung des Himmels unter die Sternwarten, so dass jeder Halbkugel der Erde gleiches Areal zugewiesen wird, ist auch keine billige. Der Nordhalbkugel ist der grössere Theil zu übertragen, wenn die Arbeit ohne Beeinträchtigung anderer wichtiger Interessen ausgeführt werden soll.

Von diesen Gedanken ausgehend — zu einer Zeit, da die Benutzung der Photographie zur Darstellung des gestirnten Himmels noch aussichtslos schien — fasste ich den Entschluss, den drei Sectionen des Bonner Sternverzeichnisses noch eine vierte von beiläufig gleicher Ausdehnung in Declination wie die beiden ersten hinzuzufügen und auch der neuen Section Sternkarten als Fortsetzung des Bonner Himmelsatlas nach Süden beizugeben. Ich war überzeugt, dass es gelingen werde die durch die stärkere Extinction des Lichtes in grossen Zenithdistanzen bedingten Schwierigkeiten zu überwinden, sowie allgemein, dass ein erträglich guter Anschluss an die ältere Arbeit in den wesentlichen Beziehungen herstellbar sei. Eine Uebereinstimmung in allen Kleinigkeiten ist selbstverständlich weder nöthig noch überhaupt nützlich. Aber in Bezug auf die Grössenangaben erschien sie nothwendig, und zwar aus drei Gesichtspunkten; es

waren im wesentlichen der früheren Arbeit gleich zu halten die Grössenscala, die untere Helligkeitsgrenze, innerhalb deren Vollständigkeit des Sternverzeichnisses angestrebt wurde, und wo möglich auch diese Grenze für die schwächeren Sterne, die dem Sternverzeichniss einverleibt wurden, um die Bürgschaften für die Vollständigkeit der helleren zu vermehren, und um einige andere Zwecke, für welche sich das Sternverzeichniss nutzbar gezeigt hatte, zu erreichen. Dass sich diese Aufgabe am besten durch die Anwendung der älteren, mir überdies vón früher her geläufigen Beobachtungs-, überhaupt Arbeitsmethoden lösen liess, liegt in der Natur der Sache.

Diese Methoden und ihre Resultate hat Argelander in einer eigenen kleinen Schrift:

> Anzeige von einer auf der Königlichen Universitäts-Sternwarte zu Bonn unternommenen Durchmusterung des nördlichen Himmels als Grundlage neuer Himmelskarten. Bonn 1856. 8°.

ausführlich beschrieben, in der Einleitung zu Band 3 der Bonner Beobachtungen daraus das auf das Sternverzeichniss Bezügliche wiederholt, und ebenda, sowie in Band 4 und 5 diejenigen Ergänzungen hinzugefügt, welche sich im weiteren Verlaufe der Arbeit als wünschenswerth herausgestellt hatten. Unter Hinweis auf diese Darlegungen, besonders auf die in Band 3 enthaltene beschränke ich mich also im folgenden auf diejenigen Punkte, in denen ich mehr oder weniger von den Specialitäten des früheren Arbeitsplanes abgewichen bin. Ein Theil dieser Angaben, öfters sogar in grösserer Ausführlichkeit, wenn solche ein augenblickliches Interesse hatte, findet sich allerdings schon in den Jahresberichten, die ich seit 1877 in der Vierteljahrsschrift der Astronomischen Gesellschaft veröffentlicht habe, oder ebendaselbst in den Berichten über die Versammlungen der Gesellschaft zu Stockholm, Berlin, Strassburg, Wien und Genf. Doch dürfte es wohl zweckmässig sein, auch das Wesentlichste des dort Mitgetheilten hier in anderer Darstellung wieder einzufügen.

2.

Dass die optische Kraft des früher angewandten Cometensuchers nicht ausreiche, oder wenigstens, dass die Luftzustände, bei denen dies in den südlichsten noch in Frage kommenden Declinationen der Fall ist, nur ausnahmsweise vorkommen, zeigte sich gleich bei den ersten Versuchen im Herbst 1875, ja es war eigentlich schon durch einige Zonen bewiesen, die 1852 von Thormann in −22° und 1853 von mir in −16° und −20° beobachtet worden waren. Zwar hätte die Vertauschung des Oculars gegen ein stärkeres hierin einiges bessern können*). Indessen lagen noch andere Gründe vor, ein stärkeres Fernrohr anzuwenden (sie sind zum Theil schon von Argelander in § 2 der Einleitung von Band 5 angegeben), und zu diesen zähle ich auch den Umstand, dass ich in Mannheim viele Jahre mit Grössenvergleichungen an einem sechszölligen Objectiv beschäftigt war und ein ziemlich festes Gedächtnissbild von der Art erworben zu haben

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*) Die Constanten des Suchers, die Band 3, S. V nur ungefähr angegeben sind, wurden neuerdings von dem jetzigen Assistenten der Sternwarte Dr. Scheiner bestimmt:

Freie Objectivöffnung 78 Millimeter (34.6 Pariser Linien);

Durchmesser des aus dem Ocular austretenden Lichtbüschels $8^2/_3$ mm, also Vergrösserung 9.0;

Durchmesser des Diaphragmas zwischen Auge und Ocular 8.0 mm.

Dieser letztere ist also eigentlich zu klein, freilich immer noch grösser als die Pupillenöffnung der Beobachter unter mittleren, vielleicht selbst grösser als unter den günstigsten Umständen. Uebrigens sind manche Zonen ohne dies Diaphragma beobachtet, indem dasselbe, zunächst zu dem Zwecke, um das Beschlagen des Oculars zu vermindern, vor Beginn der Zone entfernt worden war.

glaube, wie sich in Objectiven von dieser Grösse die Helligkeitsklassen der Bonner Durchmusterung darstellen. Ich wählte daher für die Arbeit ein im Jahre vorher für die Sternwarte erworbenes Fernrohr von Dr. Hugo Schröder von 6 Zoll Oeffnung bei 6 Fuss Brennweite, obwohl dieses nur sehr provisorisch aufgestellt werden konnte. Das Stativ, auf welchem es montirt ist, ist das alte, welches früher den fünffüssigen Fraunhofer trug, als für die Durchmusterung die Revisionszonen beobachtet wurden. Es ist für das schwerere Schröder'sche Fernrohr zu schwach, und infolge dessen sind manchmal während der Beobachtung einer Zone Verstellungen vorgekommen; doch erinnere ich mich keiner solchen, für welche nicht eine äussere Ursache nachweisbar gewesen wäre. Der Einfluss des Windes hat sich dabei gegen meine Erwartung ungemein gering herausgestellt; vielleicht eine Folge der grösseren Zenithdistanzen, welche gestatteten bei sämmtlichen Zonen die Dachklappen des Beobachtungsthurmes, des Ostthurmes der Sternwarte, geschlossen zu halten, und der bei stärkerem Winde stets angewandten Vorsicht in der Stellung der Seitenklappen und der Wahl der Beobachtungs-Azimuthe.

Das Schröder'sche Fernrohr hat nach Scheiner's Bestimmungen ein Objectiv von 193 Centimeter (71.3 Pariser Zoll) Brennweite und 159 Millimeter freier Oeffnung. Von den beigegebenen Ocularen ist zwar häufig ein stärkeres von 81maliger Vergrösserung bei den Einzelrevisionen und Specialdurchmusterungen der Sternhaufen angewandt worden; für die Zonen konnte aber, wenn das Gesichtsfeld die zur Durchführung der Arbeit in absehbarer Zeit genügende Grösse haben sollte, nur das schwächste, ein Mikrometer-Ocular von 26maliger Vergrösserung (genauer 26.1) in Betracht kommen, welches ein Gesichtsfeld von 1° 44′ besitzt, bis wenige Minuten vom Rande entfernt genügend scharfe Bilder gibt, und mithin die Durchmusterungszonen mehr als $1^1/_2{}^\circ$ breit zu nehmen gestattete. Es war also ein Arbeitsplan möglich, bei welchem die Nullpunkte der einander jeweils zur Hälfte deckenden Zonen $^3/_4{}^\circ$ von einander abstehen und die Zonen noch beiläufig 5′ bis 6′ in die zweitnächste Zone übergreifen.

Die gegen den Cometensucher bedeutend verstärkte Vergrösserung macht das Gesichtsfeld dunkler als es bei der früheren Arbeit war. Die Striche der anzuwendenden Mikrometerscala hätten sehr dick hergestellt werden müssen, um sie ohne künstliche Beleuchtung sichtbar zu machen. Eine solche Beleuchtung geschieht an dem Schröder'schen Fernrohr durch eine der Declinationsaxe gegenüber angebrachte, in einer messingenen Büchse steckende kleine Petroleumlampe, und sie wird den Verhältnissen angepasst mittelst einer, in dem das Licht der Lampe in das Innere des Fernrohrs leitenden System eingeschalteten Scheibe, die sechs kreisrunde Ausschnitte von 6 bis 40 mm Durchmesser besitzt. Mit einiger Uebung gelingt es leicht, vom Ocular aus in höchstens zehn Secunden (und solche Pausen kommen selbst in den reichsten Zonen in genügender Zahl vor) die excentrisch gestellte Scheibe so zu drehen, dass das Licht der Lampe durch denjenigen Ausschnitt fällt, welcher das Gesichtsfeld dem Luftzustande, der Zenithdistanz der Zone, der Disposition des Auges und andern maassgebenden Umständen entsprechend hell erleuchtet. Es versteht sich von selbst, dass hierauf schon vor Beginn jeder Zone grosse Sorgfalt verwandt wurde. Abgesehen von aller Veränderlichkeit der äusseren Verhältnisse existirt aber eine Tendenz der Flamme in dem Maasse heller zu werden, wie sie die umgebende Büchse erwärmt. Die innerhalb der Zonen auszuführenden Regulirungen der Flamme bestanden demgemäss wesentlich im Abschwächen der Beleuchtung, und sie waren häufiger an heissen Sommertagen und während der ersten Zone des Abends nöthig als im Winter und als später in der Nacht, das letztere wenigstens dann, wenn die Beleuchtung während der Pausen nicht unterbrochen worden war. Den Rath von Argelander (Einleitung zu Band 5), die Beleuchtung so einzurichten, dass man die schwächsten Sterne, die man beobachten will, eben noch deutlich

sieht, habe ich nicht zweckmässig gefunden. Es ist mir viel leichter diejenige Helligkeit des Gesichtsfeldes einzustellen, welche den Strichen des Mikrometers den richtigen Grad von Deutlichkeit ertheilt, und sodann aus der Menge der sichtbaren Sterne eine befriedigende, der programmgemässen unteren Helligkeitsgrenze entsprechende Auswahl zu treffen, als ein Urtheil darüber zu gewinnen, bei welcher Helligkeit des Feldes die dieser unteren Grenze angehörigen Sterne dauernd gut sichtbar bleiben. Die Regulirung der Beleuchtung während der Zone wäre dann ebenso Regel geworden, wie sie jetzt eine zwar nicht sehr seltene Ausnahme, aber immer doch eine Ausnahme war, und ich hätte bei dem fortwährenden Wechsel der Beleuchtung leicht allen Maassstab für die Grössenschätzungen verloren.

Die Feinheit der Regulirung, welche bei dem Einfallen des directen Lampenlichtes in das Fernrohr nicht sonderlich gross ist und durch excentrische Stellung der oben erwähnten Blenden nicht ohne sonstige kleine Nachtheile vermehrt werden kann, wird ganz wesentlich dadurch erhöht, dass sich zwischen Lampe und Beleuchtungsprisma ein Kupferoxydulglas einschalten lässt. Die Vortheile einer rothen Feldbeleuchtung gegenüber der durch die gewöhnliche hellgelbe Lichtflamme sind so oft hervorgehoben worden, dass ich hier nur hinzuzufügen brauche, was für die Arbeit wesentlich ist. Bei einer Helligkeit des Feldes, die die Striche der Mikrometerscala ganz deutlich als scharfe schwarze Linien erscheinen lässt, sind bei mittlerem Luftzustande in dem Schröder'schen Fernrohr selbst in Zenithdistanzen von 70° noch Sterne sichtbar, die ich um wenigstens $1^1/_4$ Grössenklassen schwächer schätze als die untere Helligkeitsgrenze des Sternverzeichnisses, und selbst in den grössten vorkommenden Zenithdistanzen, bei 76°, passirte noch ziemlich oft eine Anzahl von Sternen den Stundenstrich, die als vermuthlich zu schwach absichtlich unbeobachtet blieben. Eine Schwierigkeit in der Grössenschätzung und selbst in der Erkennung ausgezeichneter Sternfarben, die sich aus der Anwendung rothen Lichtes zur Beleuchtung hätte erklären lassen, habe ich nie bemerkt. Auch die anfänglich gehegte Befürchtung, es werde bei rother Beleuchtung eine zu frühzeitige Ermüdung des Auges eintreten, hat sich nicht bewahrheitet; im Gegentheil gestaltete sich bei der künstlichen Beleuchtung das Beobachten viel angenehmer als bei der durch Mondlicht.

Bei dem anfänglichen Abschätzen der Zeit, welche die Arbeit erfordern möchte, hatte ich annehmen zu dürfen geglaubt, dass ich viel näher an den Vollmond herankommen könnte als früher. Auch dies ist nicht eingetroffen; am Cometensucher haben wir früher bei Anwesenheit des Mondes über dem Horizont nur beobachtet, wenn das erste Viertel noch nicht oder kaum erreicht oder das letzte bereits überschritten war. Ich habe jetzt durch das stärkere Fernrohr für die Zonen kaum mehr als zwei Tage in jeder Lunation gewonnen. Den Grund der unerwarteten Kleinheit dieses Zuwachses suche ich in zwei Umständen. Die äusseren Verhältnisse der Bonner Sternwarte sind nicht mehr so günstig wie vor 30 Jahren. Einige nahe Fabriken erfüllen, namentlich bei südöstlicher, hier im allgemeinen sehr günstiger Windrichtung, die Luft oftmals mit Rauch, der bei dunklem Himmel selten viel schadet, aber vom Monde erleuchtet einen Schleier bildet, der sich über das Gesichtsfeld legt. Ferner ist sehr wahrscheinlich bei Mondschein der Durchmesser der Pupille trotz der Anwendung eines Schirmes zum Abhalten der äusseren Beleuchtung zu klein. Der Durchmesser des austretenden Lichtbüschels ist nach den oben angeführten Daten 6.1 Millimeter, und diese Oeffnung erreicht meine Pupille bei einigermaassen heller Mondscheinbeleuchtung nicht, bei der schwächeren der Lampe aber recht wohl. Ich habe dieselbe bei einer Beleuchtung, welche die Pupille noch im Spiegel gut sichtbar machte, zu 6 bis $6^1/_4$ Millimeter gemessen, die Beleuchtung im Fernrohr ist aber weit schwächer, so dass ich nicht zweifle, dass während des Beobachtens bei künstlichem Lichte, obwohl hier eine sehr

schwache Beleuchtung des Beobachtungsraumes nicht ausgeschlossen werden konnte, die Pupille fast 7 Millimeter, vielleicht manchmal sogar mehr geöffnet war*).

Die bei den Zonenbeobachtungen gebrauchte Glasscala unterscheidet sich von der des Cometensuchers wesentlich durch die grössere Feinheit der Striche. Es hat gar keine erhebliche Schwierigkeit gemacht dieselben mittelst Flusssäure in das Glas einzuätzen und sodann durch Einreiben mit einer wesentlich aus Graphit bestehenden Masse im matt erleuchteten Felde sichtbar zu machen. Die Striche sind mit der Theilmaschine gezogen, die Theilungsfehler sind für den verfolgten Zweck als unbedeutend zu betrachten. Ihr Intervall ist in Bogenmaass 4'.46, ihre Dicke nahe 20". Den Mittelstrich ganz genau in die Mitte des Feldes zu bringen ist nicht erstrebt worden; man übersieht die Scala von + 11.4 bis — 11.8. Wie früher ist der Mittelstrich sehr lang, er geht etwa durch $^3/_8$ der von dem Glas der Scala bedeckten Hälfte des Gesichtsfeldes; die Länge der kürzeren Striche ist 13', jeder dritte ist zur Erleichterung der Zählung der Striche 20' lang ausgezogen. Im Herbste 1883 von der Astronomen-Versammlung in Wien zurückgekehrt, fand ich diese Scala stark beschädigt vor — es waren Handwerker auf dem Thurme beschäftigt gewesen. Die wenigen späteren Zonenbeobachtungen sind an einer der beschriebenen fast genau gleich gemachten Scala angestellt.

Als Beobachtungsuhr diente für die Zonen dieselbe Uhr wie früher, Tiede Nr. 37. Bei den Einzelrevisionen wurde sie öfters durch ein Sternzeitchronometer, Tiede Nr. 82, ersetzt, und wenn ich allein beobachtete, meist durch einen viel lauter schlagenden, gut abgeglichenen Zähler.

Um endlich alles, was sich auf Beschaffenheit und Leistungen der Beobachtungsmittel bezieht, hier zu vereinigen, bemerke ich noch, dass ich das lästige Beschlagen des Oculars durch ein einfaches Mittel auf ein Minimum reducirt habe. Ich habe nämlich die Fassung des Oculars zwischen der äussersten Linse und der Blende, an welche das Auge zu halten ist, zur Hälfte abschneiden lassen, so dass das Diaphragma nur durch einen halben Cylinder festgehalten wird. Die offene Seite wird stets nach oben gedreht. Jeder durch Unvorsichtigkeit beim Ausrufen der Grössen u. dergl. entstandene Anflug von Feuchtigkeit auf der äusseren Fläche der Ocularlinse verschwindet sofort wieder oder ist durch leichtes Fächeln mit dem Papier, auf welches die Mikrometertheile geschrieben werden, zu entfernen, und nur bei strenger Kälte ist es vorgekommen, dass das Diaphragma abgeschraubt werden musste um das Ocular von dem gefrorenen Hauch zu befreien. Die complicirte Blasebalg-Vorrichtung bei der früheren Einrichtung hat nicht entfernt so gut functionirt.

3.

Die Vorbereitungen zu den Beobachtungen begannen bereits Ende September 1875. Um diese Zeit fing ich an durch Vergleichung einzelner Partien der Bonner Karten, namentlich aber der mir damals sehr genau bekannten Umgebungen von veränderlichen Sternen in südlichen Declinationen (R, S, T Sagittarii, R Scuti, T Capricorni, R Aquarii, S und *o* Ceti u. s. w.) mein Urtheil über die Helligkeitsverhältnisse im Schröder'schen Fernrohr an die von mir in Mannheim festgehaltene Bonner Grössenscala anzuschliessen. Hierüber habe ich allerdings nicht viel notirt, persönlich aber waren mir diese Studien von grossem Nutzen. Sie führten mich auch bald zu einer constanten Schätzungsweise für die helleren Sterne etwa bis 9.0 oder 9.2

*) Hiernach ist das in dem Jahresbericht für 1876, V. J. S. der A. G. Band 12, S. 45 nach sehr provisorischen Versuchen Gesagte zu modificiren.

hinab; für die schwächeren aber bestätigten sie nur die früheren Erfahrungen, nämlich dass insbesondere in den Abtheilungen 9ᵐ4 und 9ᵐ5 des Bonner Sternverzeichnisses Sterne von sehr verschiedenen Helligkeiten, mindestens von einer halben Grösse Umfang, vereinigt seien. Hier musste ich nothwendig die Unvollkommenheiten der früheren Arbeit zu vermeiden oder wenigstens wesentlich zu verringern suchen. Die ältere Bonner Grössenabtheilung 9ᵐ5 enthält einen grossen Theil der Sterne, die, wenn die Scala der helleren Sterne regelmässig fortgesetzt worden wäre, der Grösse 10ᵐ0, oft sogar noch schwächeren, nicht allzuselten bis 10ᵐ5 hätten zugetheilt werden müssen. Ich beschloss, bei der Grösse 10ᵐ0 stehen zu bleiben, habe indessen einige Andeutungen, dass mir dies gleichwohl nicht völlig gelungen ist, dass ich vielmehr dem Sternverzeichniss trotz aller gegentheiligen Absicht doch eine Anzahl schwächerer Sterne einverleibt habe. Vollständigkeit aber konnte ich wie früher nur bezüglich der helleren Sterne, bis 9ᵐ2 oder auch 9ᵐ3 hinab, erstreben, wenn die Arbeit nicht unabsehbar werden sollte; und so wurden denn Sterne, deren Helligkeit 9ᵐ5 oder geringer geschätzt worden war, wenn sie nur einmal beobachtet waren und ihre Existenz und programmgemässe Helligkeit nicht anderweitig festgestellt werden konnte, nicht consequent der Einzelrevision unterworfen, um sie eventuell für das Sternverzeichniss zu gewinnen.

Meine Absicht war, die Durchmusterung bis zu 24° oder 25° südlicher Declination auszudehnen, nämlich bis zur Nordgrenze der Cordoba-Zonen, jedoch so, dass ich mit der grossen Arbeit von Gould noch einen oder zwei Grade gemein hätte. Bei den oben erwähnten Grössenvergleichungen zeigte sich aber südlich von −20° eine so rasche Verschlechterung der Beobachtungsverhältnisse, dass ich an der Durchführbarkeit dieser Absicht verzweifelte. Nicht als ob nicht genügend viele Sterne auch in diesen südlichsten Declinationen sichtbar geblieben wären; aber das trübere Aussehen der Sterne und die in den genügend klaren Nächten meistentheils vorhandene starke Scintillation oder grosse Unruhe der Luft widersetzten sich der Grössenschätzung in hohem Maasse; ich hatte dabei stets das Gefühl, dass es mir unmöglich sei die Grössenangaben in diesen südlichsten Partien den andern gleichartig zu erhalten und ihnen die erwünschte Sicherheit zu geben. Deshalb setzte ich die Südgrenze auf −23°, und vielleicht ist auch diese noch etwas zu südlich angenommen. Die Arbeit umfasst also 29 Zonen zu je 24 Stunden AR., nämlich 27 vollständige, deren Nullpunkte in $-2\frac{3}{4}°$, $-3\frac{1}{2}° \ldots -21\frac{1}{2}°$, $-22\frac{1}{4}°$ liegen, und an den Grenzen 2 unvollständige, die ohne die übergreifenden Minuten $\frac{3}{4}°$ breit, mit Nullpunkten in −2° und −23° hätten beobachtet werden können, deren Nullpunkte ich aber im allgemeinen auf $-2\frac{1}{4}°$ und $-22\frac{3}{4}°$ gelegt habe, und die in die Nachbarzonen etwas mehr als die übrigen Zonen eingreifen. Nur in dem der Berliner Karte Hora V angehörigen Areal sind, wie bei der früheren Arbeit, Wiederholungszonen nicht beobachtet, weil mir hier die Beobachtungshefte der sehr vollständigen Durchmusterung von Julius Schmidt zur Verfügung standen; hier fehlen also (durchschnittlich von $4^h 59^m$ bis $6^h 5^m$ für 1855) die 9 Zonen −2°, $-3\frac{1}{2}° \ldots -14°$, nicht sowohl, um $1\frac{1}{5}$ Procent der Zonenarbeit zu sparen, als weil ich eine Ueberfüllung dieser Gegend befürchtete.

Die Nullpunkte sind sämmtlich auf das Aequinoctium von 1855 bezogen, das also auch für die Sternörter angenommen ist. Dies wird wohl kaum allgemeine Billigung finden, da hierdurch sowohl die Reductionsrechnungen erschwert, als auch die Uebertragung der Positionen des Sternverzeichnisses auf die Gegenwart unbequemer geworden sind. Ich habe es aber als wesentlich betrachtet, dass die vierte Section des Sternverzeichnisses den drei früheren auch in ihren räumlichen Abtheilungen vollständig, ohne Lücken und (im wesentlichen) ohne Wiederholungen sich anschliesse, und habe deshalb meinerseits die kleine Vermehrung der Arbeit nicht

gescheut, ohne indessen zu verkennen, dass dadurch einige, sonst vermeidbare, Unbequemlichkeit im Gebrauche entstanden ist.

In dem Modus der Zonenbeobachtungen habe ich weder bezüglich der Art der Notirung, noch in der des Zusammenwirkens mit dem Gehülfen an der Uhr etwas Wesentliches zu ändern gefunden. Es gereichte der Arbeit zum Vortheil, dass die grösseren Zenithdistanzen im allgemeinen eine bequemere Lage des Beobachters zuliessen, und dass die Feldbeleuchtung das Auge weniger rasch ermüden liess, als dies früher bei der schwierigeren Sichtbarkeit der Theilstriche im dunklen Felde der Fall gewesen war. Die Ausdehnung der Zonen konnte daher durchschnittlich etwas länger genommen werden, bei einzelnen sogar sehr lang; die längsten sind Zone 241, beobachtet 1877 Oct. 9 in $-22^1/_4°$, 2^h52^m lang, Zone 181, 1877 Mai 5, 2^h40^m in $-10^1/_4°$, Zone 371, 1879 April 28, 2^h26^m in $-9^1/_2°$. Auch die Zonen 317, 429, 431 sind länger als 2 Stunden beobachtet, viele über $1^1/_2$ Stunden. Ich müsste mich dagegen verwahren, wenn man die Endpartien dieser Zonen ohne weiteres für minderwerthig halten wollte, weil eine Uebermüdung unvermeidlich gewesen sei. Ich habe es stets, wenn die Zonen nicht allzureich waren, meiner Natur mehr zusagend gefunden (schon bei der älteren Durchmusterung), ein Beobachtungs-Pensum in wenig Absätzen zu erledigen, und schwieriger, nach längeren oder kürzeren Pausen in relativ später Nachtstunde nochmals zu beginnen. Und dieselbe Stimmung habe ich bei allen den drei Gehülfen gefunden, die mir bei den Südzonen Dienste leisteten. Uebrigens ist die Wandelbarkeit unserer atmosphärischen Verhältnisse so gross, dass viele kleine Stücke, bis zu 12 Minuten in AR. abwärts, eine Zonennummer führen; so dass trotz der vorhin erwähnten Tendenz, die Zonen sehr lang zu machen, die 700 Zonenstunden, welche die Beobachtungen umfassen, sich doch auf 626 Zonen vertheilen und ausserdem auf 38 kleine Bruchstücke, die eine Zonennummer nicht erhalten haben, weil sie entweder gar zu bald durch Wolken unterbrochen wurden, oder in sehr viel geringerer Breite als die vollen Zonen, bis zu 6′—12′ Ausdehnung in Declination herab, beobachtet worden sind. Diese letzteren sind Specialdurchmusterungen der Sternhaufen GC 1454, 1483, 1637, 4346, die auf diese Weise, zum Theil mit der stärkeren Vergrösserung, an je zwei Abenden, und von GC 1551 und 1564, die je dreimal durchgearbeitet sind. Die Durchschnittsausdehnung einer vollen Zone in AR. beträgt also 1^h7^m0; bei den 1797 Zonen, die in die drei ersten Sectionen des Sternverzeichnisses eingegangen sind, betrug sie 1^h3^m5.

Mit ganz verschwindenden, in die erste Zeit fallenden Ausnahmen wurde es vermieden, die zweite Durchmusterung derselben Himmelsgegend in demselben Jahre vorzunehmen, in welchem die erste ausgeführt war, überhaupt wurde die erste (mittelst der Zonen $-2^3/_4°$, $-4^1/_4°$ . . .) möglichst vollendet, bevor die zweite (durch die Zonen $-2°$, $-3^1/_2°$ . . .) in derselben Rectascension begonnen wurde. Dies geschah nicht bloss, um selbst im Falle einer Unterbrechung wenigstens das Ziel einer einmaligen vollständigen Aufnahme des gesammten Areals zu erreichen; es sollte vielmehr dieser Arbeitsplan auch zu einer möglichsten Gleichförmigkeit durch die ganze Arbeit hindurch helfen. Bei der älteren Durchmusterung war ein solches Vorgehen aus nahe liegenden Gründen nicht thunlich, und so kommt es, dass hier namentlich an der Südgrenze die Zonen der Declinationsgrade x, $x+1$, $x+2$ . . . in derselben Rectascension manchmal innerhalb weniger Tage zusammen liegen. Dies ist nicht ohne Einfluss auf die Gleichförmigkeit der Grössenangaben des Sternverzeichnisses gewesen; ich glaube Beweise zu haben, dass ganz besonders die beiden südlichsten Grade von den nördlicheren etwas abweichen — ein Umstand, der jedoch wohl erst durch die glücklicherweise allgemeiner werdenden photometrischen Messungen völlig klar gestellt werden wird.

Die Tafeln zur Verwandlung der notirten Uhrzeiten und Scalentheile in Sternörter für 1855.0 sind mit aller nöthigen Schärfe und Sorgfalt berechnet. Die Reductionen haben im allgemeinen die Form

$$\text{AR. } 1855.0 = u + a + b.t + c.p$$
$$\text{Decl. } 1855.0 = \delta_0 + d.t + p.\mathcal{J}$$

Hier ist u die notirte Zeit, p der notirte Theilstrich, a eine Constante, die wesentlich vom Stundenwinkel und dem Stande der Uhr abhängt, ausserdem aber von dem Betrag der Praecession seit 1855.0 und kleineren Correctionen für Refraction u. s. w. Sie gilt zunächst für eine der Mitte der Zone nahe Rectascension, bez. Uhrzeit, von der aus die Zeit t gezählt wird. Für eben diese Zeit gilt δ_0, die Declination des Mittelstrichs; b und d aber sind die Veränderungen der Werthe von a und δ_0 in der Zeiteinheit, in welcher t ausgedrückt wird; ersteres abhängig von dem Uhrgange und dem Differential der Praecession nach der Rectascension, letzteres von dem Differential nach der Declination. Die Constante c gibt den Einfluss der Neigung des Stundenstrichs gegen den Declinationskreis von 1855.0, die Aenderung während einer Zone konnte hier stets vernachlässigt werden. $\mathcal{J}$ ist das Intervall, nach der Untersuchung einer grösseren Anzahl von Zonen aus dem Jahre 1876 angenommen = 4ˢ.459 + Refractionscorrection. Es genügte, drei Hülfstäfelchen, gültig für die Werthe des Intervalls 4ˢ.4649, 4ˢ.4696, 4ˢ.4744 zu entwerfen und zur Verwandlung der Scalentheile in Bogenmaass jeweils dasjenige anzuwenden, welches dem variabeln $\mathcal{J}$ am besten entsprach.

Für jede Zone wurden, wenn sie überhaupt so viele im Meridian oder sonst genügend genau bestimmte Sterne enthält, 30 Sterne ausgewählt, 10 dem nördlichen Drittel oder Viertel der Zone angehörige, und eben so viele nahe der Mitte und stark südlich, und im allgemeinen die Hälfte um den Anfang der Zone herum, die andere Hälfte gegen das Ende. Durch diese Sterne wurden die Reductionsgrössen a, c, δ_0 bestimmt, und $\mathcal{J}$ unter dauernder Controle gehalten. b und d sind aus Praecessionstafeln und dem Uhrgange bestimmt und durch die Vergleichung der Resultate aus den Bestimmungssternen am Anfang der Zone mit denen aus den Sternen am Ende controlirt. War hiernach eine Aenderung der Lage des Fernrohrs während der Zone zu vermuthen, so wurde dieser Umstand näher untersucht und danach in mehreren Zonen die Reduction für eine Coordinate oder für beide an der plausibeln (eventuell durch Revisionsbeobachtungen sicher ermittelten) Stelle geändert.

Im allgemeinen ist also der Einfluss der Praecessionsänderung innerhalb der Zone als der Zeit proportional angenommen. Gegen 0^h und 12^h hin ist dies aber für Declination, gegen 6^h und 18^h, wenigstens in stärkeren Declinationen, für Rectascension nicht mehr gestattet, wenn die Zonen etwas lang sind. Hier sind, um die nöthige Schärfe zu erreichen, die zweiten Differenzen berücksichtigt. In beiden Fällen wurden aber dem Rechner, der die Verwandlung der Uhrzeiten und Scalentheile in Sternörter auszuführen hatte, nicht die Reductionsformeln in die Hand gegeben, sondern Tafeln, welche die an jeder Stelle der Zone anzuwendenden Werthe von $a + bt$, bez. $\delta_0 + dt$, und ausserdem den für die Zone geltenden Werth von $\mathcal{J}$ direct angaben. Das Glied cp wurde den Rectascensionen erst beim Anfertigen der Specialcataloge hinzugefügt; sein Einfluss beträgt, da die Neigung des Stundenstriches stets klein gehalten wurde, selten mehr als 1ˢ; ganz konnte die Neigung wegen des Einflusses der Praecession nicht dauernd wegcorrigirt werden. Die Reductionstafeln sind auf 0ˢ.1, bez. 0″.1 abgerundet, und werden nur selten um 0ˢ.2, bez. 0″.1 fehlerhaft sein. Bei der Art der Berechnung der Sternörter, nämlich durch Berechnung der Differenzen gegen die unmittelbar vorhergehenden Sterne, können aber in Declination noch sehr leicht Abweichungen von 0″.1 gegen das richtige Resultat der Reductionstafeln hinzukommen,

ja solche von o!2 unentdeckt bleiben. Den grössten Theil der letzteren glaube ich aber beim Anfertigen der Specialcataloge verbessert zu haben.

4.

Die Specialcataloge habe ich etwas weniger gedrängt angelegt als dies früher geschah; sie haben für jeden Stern drei Columnen (je eine für Grösse, AR. und Decl.) mehr erhalten. Sie sind übrigens in den Gegenden, wo viele Zonen concurriren, immer noch gedrängt genug, obwohl z. B. für die Specialdurchmusterungen der Sternhaufen erst besondere Hefte angelegt und nur die Resultate aus diesen in die eigentlichen Specialcataloge übertragen sind. Bei dem Eintragen der Zonen in diese Hefte wurde alle mögliche Sorgfalt angewandt, um nicht Beobachtungen zu übersehen, oder durch Schreib- oder Reductionsfehler getäuscht zu werden. Die sämmtlichen zugehörigen Originale waren dabei stets offen zur Hand, und beim Ausschreiben der Sterne wurde in erster Linie nicht die berechnete Declination, sondern der dabei stehende Scalentheil als maassgebend betrachtet, damit nicht bei etwaigen Schreibfehlern von einem Grad oder von Zehnern der Bogenminute der betreffende Stern in das unrichtige Heft geschrieben werde. Wenigstens ein Viertel aller Original-Notirungen von Scalenwerthen sind bei dieser Gelegenheit auf Deutlichkeit und Uebereinstimmung mit der Abschrift geprüft worden. Ich bedaure, dass mir der Gedanke, die so geprüften Declinationen als solche in den Specialcatalogen zu bezeichnen, erst im Jahre 1877 gekommen ist.

Ausser meinen eigenen Beobachtungen am Schröder'schen Fernrohr sind in die Specialcataloge eingetragen, und zwar in der Regel alsbald nach dem Einschreiben der Grundzone*) und etwa noch der Bessel'schen Zonensterne u. s. w., die von Argelander, Krueger, Thormann und mir früher beobachteten Zonen am Cometensucher. Von diesen kam ungefähr die Hälfte nur für die Declinationen nördlich von —3° 10′ in Betracht, die andere Hälfte aber hatte dem früheren Plane Argelander's dienen sollen. Unter diesen Zonen befinden sich meine ersten, ich möchte fast sagen Uebungszonen, denn sie sind namentlich in Declination sehr ungenau und hätten sicher wiederholt werden müssen; aber auch die weit besseren Thormann'schen Zonen habe ich nicht für hinreichend vollständig und genau erachtet, um in den Gegenden, über welche sie streifen, eine zweite Durchmusterung meinerseits entbehren zu können. Ich habe zwar manchmal durch diese älteren Zonen die Existenz von Sternen, die in einer der neueren Zonen fehlen, constatiren können, bin aber auch hierin, wie ich glaube, sehr vorsichtig gewesen und habe den reichlich grösseren Theil solcher Sterne mit zu den durch eine Einzelrevision zu untersuchenden gezählt. In das Sternverzeichniss aber sind die Positionen und Grössen dieses älteren Bonner Materials mit Ausnahme weniger Beobachtungen aus den früheren Revisionszonen nicht eingegangen. Diese letzteren beziehen sich aber überwiegend auf die Nachträge zu Zone —1°, welche am Ende dieser Einleitung gegeben sind.

Auch die Beobachtungen, die Julius Schmidt 1849 bis 1852 hier an unserem grösseren Cometensucher in Zonen von 1° Breite für seine Berliner Karte Hora V angestellt hat, habe ich bei der Anfertigung des Sternverzeichnisses nicht in ein Mittel mit den meinigen vereinigt, sondern die letzteren als allein maassgebend betrachtet. Die Zonen von Schmidt sind, bevor sie in die Specialcataloge eingetragen wurden, ganz neu auf die Richtigkeit ihrer Positionen unter-

*) In den Graden —3°, —6° ... —21° genauer „der Grundzonen". Denn hier, wo die weit früher als die Wiederholungszonen beobachteten Zonen $-2\frac{3}{4}°$ und $-4\frac{1}{4}°$, $-5\frac{3}{4}°$ und $-7\frac{1}{4}°$ u. s. w. in der Mitte zusammenstossen, besteht der erste Eintrag mit seltenen Ausnahmen aus je zwei Zonen.

sucht, und nur selten fanden sich die anzubringenden Verbesserungen so klein, dass die Vernachlässigung gerechtfertigt gewesen wäre. Jedoch auch in dieser verbesserten Gestalt waren die Rectascensionen gegen die neueren zu minderwerthig, für die Declinationen sind aber anscheinend die Original-Aufzeichnungen der Scalentheile nicht mehr vorhanden, so dass eine genaue Prüfung stärkerer Abweichungen nicht möglich ist. Die Schmidt'schen Grössenschätzungen hätten, da ihnen eine andere Scala zu Grunde liegt (Schmidt schätzt die Sterne 7^m bis 9^m schwächer, die schwächeren etwas heller als ich), nicht ohne sehr eingehende prekäre Untersuchung mit den meinigen vereinigt werden können. Die Grössen der von Schmidt wiederholt beobachteten Sterne, welche in meinen Zonen nicht vorkommen, sind durchweg, und ihre Positionen zum grössten Theil durch besondere Revision am Schröder'schen Fernrohr bestimmt worden; mehrere wurden zu schwach gefunden und sind nicht in das Sternverzeichniss aufgenommen.

Von den Verzeichnissen der an Meridianinstrumenten bestimmten Sterne sind die folgenden regelmässig verglichen worden.

1. Bessel's Zonen in Abth. 7 bis 10 der Königsberger Beobachtungen, deren Reductionstafeln ich durch Hinzufügung der Praecession und eventuell kleinerer Correctionen (meist von E. Luther oder von Argelander ermittelt) zur directen Berechnung der Positionen für 1855 eingerichtet hatte. Die Abtheilung 37 kam erst nach Vollendung des allergrössten Theils der Einträge in meine Hände, konnte also nur ausnahmsweise benutzt werden. Weisse's Catalog ist nur hin und wieder zur Controle der Rechnung nachgesehen worden.
2. An Stelle von Bessel traten von $-15°$ an die südlichen Zonen von Argelander, und zwar nach dem in Besitz der Sternwarte befindlichen Argelander'schen Handexemplar des Catalogs von Oeltzen, in welchem u. a. ein grosser Theil der Reductionsfehler des Catalogs verbessert ist. Wo sich eine stärkere Abweichung irgend welcher Art fand, sind stets die Originalbeobachtungen nachgesehen worden.
3. Band 6 und 7 der Bonner Beobachtungen, auch spätere Beobachtungen von Argelander, die sich hier vorfanden. — Nach einer von diesen drei Sammlungen ist gewöhnlich die Position der Sterne, auf $0^s.1$ und $0'.1$ abgerundet, in den Specialcatalogen angegeben.
4. Die Cataloge von Schjellerup, Lalande-Baily, Rümker einschliesslich der neuen Folge, Stunde 0 bis 6, Piazzi, Struve (Positiones mediae), und an den Grenzen nördlich der Göttinger Catalog, südlich Gould's Zonencatalog.
5. Die Lamont'schen Cataloge, aus den Münchener Zonenbeobachtungen berechnet, in den Supplementbänden 5, 9, 12, 13 zu den Annalen der Münchener Sternwarte (Suppl. 14 kam zu spät in meine Hände), und die zu Washington beobachteten, in den Washington Observations 1869, 1870, 1871 als Appendix II, IV, I veröffentlichten Zonen. Ich trenne diese Cataloge von der vorigen Abtheilung, weil ihre Bedeutung für den Hauptzweck meiner Arbeit, nämlich zu constatiren, was für hellere Sterne eigentlich in dem bearbeiteten Areal existiren, in ihrem gegenwärtigen Zustande durch die grosse Menge ihrer Fehler sehr beeinträchtigt ist.

Weniger vollständig sind andere Sterncataloge eingetragen. So aus Yarnall's Washington Catalogue im allgemeinen nur die daselbst als Anonyma angeführten Sterne; ich habe allerdings später bemerkt, dass auch verschiedene andere Sterne so bezeichnet sein sollten, die irrthümlich die Nummer eines früheren Catalogs führen. Derselbe Grundsatz wurde für die Greenwicher Cataloge adoptirt. Santini diente oft zur Beurtheilung beargwöhnter Bessel'scher Positionen. Aus den „zerstreuten" Sternen in den Astronomischen Nachrichten, den Berliner Circularen und ähnlichen Zeitschriften wurden zwar ebenfalls viele in die Specialcataloge eingetragen, doch bin

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ich darin, obwohl mir ausser Schjellerup's Verzeichniss aus Band 1—66 der A. N. noch eine von Dr. Kreutz gemachte, bis Band 95 reichende Zusammenstellung zur Verfügung stand, nicht consequent gewesen, da ich anfangs wegen der Seltenheit der Grössenangaben den Werth dieser Vergleichungen relativ zu der aufzuwendenden Mühe geringer schätzte als später. Viele grössere und kleinere Cataloge, wie Grant, die neueren Bände der Königsberger Reihe und manche andre, sind auch ziemlich vollständig verglichen, es ist aber, da das Interesse, namentlich wo die Beobachter keine Grössen angeben, zu gering schien, wenig darüber notirt worden.

Weit werthvoller waren die Vergleichungen mit einigen Beobachtungssammlungen und Kartenwerken, die deshalb, mit gewissen Beschränkungen, eben so vollständig verglichen und eingetragen wurden, wie die oben unter 1. bis 5. genannten Cataloge. Es sind dies

6. Die vier Bände des Markree Catalogue bis zu einer, durch eine vorläufige Durchsicht für jede Zone besonders ermittelten unteren Helligkeitsgrenze.
7. Dasselbe gilt von den vor 1885 veröffentlichten Blättern des Atlas écliptique der Pariser Sternwarte und einer in gleichem Maassstabe von Herrn Dr. J. Palisa gezeichneten, seitdem veröffentlichten Sternkarte, deren Original der Herr Verfasser die Güte hatte mir zum Gebrauch zu überlassen. Sie stellt die Gegend $22^h\,0^m$ bis $22^h\,21^m$ und $-9°.0$ bis $-14°.0$ dar.
8. Die Berliner Akademischen Sternkarten, und von den Hind'schen die mir zugänglichen Blätter Hora 11, 13, 14, 19, 20, 21, 22 sind vollständig verglichen. Von den Berliner Karten sind bei weitem die besten Luther's Hora 0, Hora 4 von Knorre, Hora 18 von Capocci. Letzterer hat seiner Karte ein Verzeichniss der Doppelsterne, Knorre ein Verzeichniss aller nachgetragenen Sterne beigegeben; beide sind in die Specialcataloge eingetragen. Für das Areal der Hora 0 hatte Herr Prof. Luther die Güte mir die Originale seiner Positionsbestimmungen zur Verfügung zu stellen, welche sich von $-4°.9$ nach Süden erstrecken und, auf 1855 reducirt, ebenfalls vollständig in die Specialcataloge eingetragen wurden, obwohl von den schwächeren Sternen (Luther nennt seine schwächsten, auf der Berliner Karte nicht verzeichneten Sterne 11^m) viele unterhalb der programmmässigen Helligkeitsgrenze sind.
9. Aus den Doppelstern-Verzeichnissen von J. Herschel (deren zweite und dritte Reihe, Nr. 322 bis 1000, ich jedoch nicht habe einsehen können) wurde eine Auswahl getroffen. Es lag im allgemeinen nicht in meiner Absicht, Paare von weniger als 20″ Distanz als zwei getrennte Sterne aufzuführen, doch sind gelegentlich auch viel engere Doppelsterne getrennt gesehen worden (z. B. Σ 1121, 2 Sterne hell 8^m in 7″.5 Distanz). Dadurch kam einige Willkür in die Auswahl. Ich habe mich besonders bemüht, die Begleiter der vierten und fünften Herschel'schen Klasse, wenn sie nicht in den Zonen vorkamen, durch Einzelbeobachtungen zu untersuchen, und mit Berücksichtigung des Dorpater Catalogs von 1827 den Struve'schen rejectae der ersten und zweiten Art (Mens. micr., p. XXXIII) besondere Aufmerksamkeit gewidmet.
10. Die Positionen der Nebelflecke sind aus J. Herschel's Catalogen, d'Arrest's Leipziger und Kopenhagener, und meinen Mannheimer Beobachtungen in die Specialcataloge übergegangen, wo dies von einigem Interesse schien. Die Zahl der gesehenen Nebel ist klein, mehrere sind beobachtet, aber nicht als Nebel erkannt worden. — Hier mögen auch noch Bond's Abhandlung über den Orion-Nebel und einige kleine Verzeichnisse erwähnt werden, die J. Schmidt und C. H. F. Peters von den Objecten in der Nähe von veränderlichen Sternen oder in Sternhaufen gegeben haben, und die mir für mehrere schwierig zu bearbeitende Partien von Nutzen gewesen sind.

11. Endlich habe ich die Sterngrössen aus den mit freiem Auge bearbeiteten Karten, bez. Catalogen, also aus Argelander (Uranometria nova), Heis und Behrmann, der Uranométrie générale von Houzeau und der Uranometria Argentina von Gould eingetragen.

Die verschiedenen Arten der fremden Beobachtungen sind in den Specialcatalogen sehr streng durch verschiedenfarbige Tinten unterschieden. Die Meridianpositionen sind, wie meine Zonenbeobachtungen und alle Bonner Beobachtungen (excl. der Uranometrie) überhaupt, schwarz eingetragen; die Vergleichung mit den Kartenwerken und den Sternverzeichnissen von der Art des Markree-Catalogs roth, die mit freiem Auge oder im Opernglas geschätzten Grössen gelb. Die weiterhin zu erwähnenden Revisions-Beobachtungen am Schröder'schen Fernrohr sind mit blauer Tinte, oder wenn sie, wie manchmal geschah, am Fernrohr direct in den Specialcatalog eingeschrieben sind, mit Anilintintenstift, dessen Züge mit Wasser überschrieben blau-violett erscheinen, geschrieben.

5.

Bei der Bearbeitung der Specialcataloge wurden sogleich die Stellen angemerkt, welche einer Revision bedürftig schienen, und zwar wurde dies im allgemeinen nach denselben Grundsätzen beurtheilt, wie bei der Bearbeitung des Nordhimmels, aber nahezu in jeder Beziehung strenger. Alle nur einmal beobachteten Sterne, die heller als 9.5 geschätzt waren, und ein grosser Theil der Abtheilung 9.5 selbst wurden aufgesucht, wenn ihre Existenz nicht schon durch sehr gute andere Quellen constatirt war; waren es solche in der Nähe hellerer, so wurde die maassgebende Helligkeit nach Umständen noch kleiner angenommen. Beobachtungen aus verschiedenen Zonen, welche $1^1/_4'$ bis $1^1/_2'$ in Declination von einander abweichen, sind zwar noch als demselben Stern angehörig betrachtet worden, aber nur unter besonderen Umständen ohne Revision; ebenso wenn eine Beobachtung mit dem Zeichen der Ungenauigkeit bezeichnet war; wenn sie aber im Original ein Fragezeichen hatte (Existenz des Sterns zweifelhaft), so ist niemals von der Revision Abstand genommen worden. Aus den Berliner Karten sind nur die von Knorre und Luther bestimmten Positionen, sowie die Zeichnung auf Hora 18, wenn Capocci und Inghirami übereinstimmten, ohne Revision als genügend zur Constatirung eines in meinen Zonen nur einmal vorkommenden Sterns angesehen; etwas mehr Gewicht wurde den Karten von Hind und dem Pariser Atlas, sowie den Bonner Cometensucher-Zonen eingeräumt. Die vorkommenden Versehen sind zunächst die gewöhnlichen; in den Rectascensionen Verzählungen des Gehülfen an der Uhr, in der Regel einer Anzahl auf einander folgender Uhrzeiten gemeinsam, und dann meist ziemlich leicht zu constatiren; Fehler von runden Fünfern oder Zehnern der Secunde (oft schon durch die Zeitfolge sicher zu ermitteln; Verstellungen des Fernrohrs (S. [14]). Ein sehr ärgerlicher Fehler ist, dass ich bei der Nachbeobachtung von Sternen die Zeit seit dem Durchgang durch den Stundenstrich durchschnittlich viel zu gross schätzte. Oft habe ich denselben durch sorgfältiges Aufmerken zu entfernen gesucht; wenn aber dann Stellen kamen, wo die Sterne sich etwas drängten, gerieth ich immer wieder in die alte falsche Manier. Auch im Notiren der Mikrometerstriche sind einige Arten von Fehlern bemerkenswerth. Ich habe ab und zu die Tendenz bei mir gefunden, statt des richtigen Theilstrichs den beim vorhergehenden Stern notirten noch einmal zu schreiben. Undeutliche Zahlen sind nicht gerade häufig, doch war es öfters zweifelhaft ob eine Ziffer 4 oder 9 zu lesen sei. Fehler im Vorzeichen sind sehr selten, wohl aber sind Lesefehler wie -10.4 statt $+0.4$, oder $+1.2$ statt -11.2 vorgekommen. Auf alle diese Umstände ist, sobald sie einmal erkannt waren, bei dem Aufstellen der Revisionspläne Rücksicht

genommen; selbst, wenn zwei Beobachtungen übereinstimmten und eine dritte abwich, habe ich oft die Gegend zur Revision excerpirt, nachdem mich einige sonderbare Fälle stutzig gemacht hatten*). Doch sind diese Fälle fast ganz isolirt geblieben. Ich habe es überhaupt für meine Pflicht gehalten, bezüglich der Einzelrevisionen lieber viel zu weit zu gehen als etwas hinter dem in absehbarer Zeit Erreichbaren zurückzubleiben.

Nur in einer Beziehung bin ich, wenigstens für jetzt, wohl etwas weniger streng gewesen, nämlich in der Untersuchung der vermissten Sterne aus früheren Beobachtungs-Sammlungen. Zwar sind diejenigen aus Bessel, Argelander und den Verzeichnissen gleichen Ranges eben so vollständig untersucht wie früher, aber unter den neu hinzugekommenen Sammlungen sind einige, in denen so viele und so complicirte Fehler vorkommen und für so viele Pseudo-Sterne, die am Himmel nicht aufzufinden waren, gar keine plausibele Correctur gefunden werden konnte, dass ich es bald als eine unrichtige Verwendung der Zeit in den uns knapp zugemessenen klaren Nächten ansehen lernte, solche Objecte am Himmel zu verificiren. Vielmehr habe ich hier in vielen Zonen es meist als ausreichenden Beweis der Nichtexistenz betrachtet, wenn alle meine Zonen an dem betreffenden Orte nichts aufwiesen. Dass dies Verfahren unter Umständen die Vollständigkeit des Sternverzeichnisses gefährden kann, zeigt u. a. der Stern -11° 3114, über den ich V. J. S. Band 18, S. 279 berichtet habe. Aber dies ist doch ein Object, dessen Existenz auch anderweitig erwiesen war; die Wahrscheinlichkeit, dass unter den beiläufig 200 der Untersuchung noch harrenden Objecten der erwähnten Art sich mehr als ein oder höchstens zwei programmgemässe Sterne finden sollten, die mir nun ganz entgangen wären (es seien denn veränderliche), scheint mir genügend klein zu sein. Für diese Untersuchung denke ich aber im allgemeinen die Neureductionen abzuwarten, die wir, wie bekannt, von den Münchener Sternörtern und denen der Washington-Zonen erwarten dürfen.

Von den Revisionen sind mehr als 99 Procent an denselben Mikrometerscalen ausgeführt, wie die Zonen selbst. Das Verfahren war im allgemeinen das folgende. Zu jedem Specialcatalog wurde ein besonderes Revisionsblatt als Arbeitsliste angelegt, welches für jede zweifelhafte Stelle ausser den zweifelhaften Sternen noch einen oder meist mehrere Bestimmungssterne, und zur Orientirung auch andere Nachbarsterne enthält; auch fand ich es bald zweckdienlich, den Objecten die Scalentheile, welche sie bei einer bestimmten Einstellung des Fernrohrs passiren mussten, beizuschreiben. Um Fehler in der Orientirung möglichst zu vermeiden, wurde die Gegend gleichzeitig in einer Sternkarte angemerkt. Hierzu dienten die besseren Berliner Karten und die Hind'schen, wo aber solche nicht verfügbar waren, wurden eigene Revisionskarten im Maassstab des Bonner Atlas gezeichnet. Auf diesen letzteren sind die revidirten Stellen dauernd vermerkt geblieben, die Bleistiftnotizen auf den andern habe ich, was ich jetzt als unrichtig empfinde, wieder entfernt. Die richtige Orientirung ist aber im allgemeinen durch das jedesmalige Mitbeobachten mehrerer ganz gesicherter Sterne, und überdies durch die für eine Zone ganz oder fast ganz gleich bleibende Declinations-Einstellung gesichert.

Dieser Arbeitsplan hat sich indessen erst im Laufe der Revisionen allmählich entwickelt; in der ersten Zeit war er weniger vollkommen, doch jedenfalls schon genügend sicher. Bei der Ausführung hatte ich häufig einen Gehülfen an der Uhr, und dann unterscheiden sich die Re-

*) -5° 1590: Declination in den beiden Hauptzonen beobachtet 0!8 und 1!3, in der Grenzzone mit Bremiker's Karte übereinstimmend 5!2. An 2 Abenden revidirt, Decl. beobachtet 5!6 und 5!6. Hiernach sind beide Hauptzonen um einen Scalentheil falsch. Ein ähnlicher Fall findet bei -22° 4998 statt, wo eine Beobachtung in den Washington-Zonen und die Zeichnung auf der Hind'schen Karte übereinstimmend gegen zwei um einen Theil in gleichem Sinne abweichende Durchmusterungszonen zeugten, und durch Specialrevision die letzteren als falsch erwiesen wurden.

visionen von den gewöhnlichen kleinen Zonenbruchstücken eigentlich nur durch die Auswahl der beobachteten Sterne und meist auch dadurch, dass der Gehülfe auch die Mikrometertheile aufschrieb. Oft auch, und seit August 1881 immer, beobachtete ich allein, und notirte dann häufig um Zeit zu sparen die Beobachtungen auf dem Revisionsblatte selbst. Durchweg legte ich Werth darauf, bei Gelegenheit eines zu erledigenden Zweifels die Helligkeit von Nachbarsternen wiederum abzuschätzen.

Einzelne Revisionen sind auch an unserem fünffüssigen Fraunhofer gemacht, einige Sterne sind am Meridiankreise verificirt worden. Manche Stellen sind aus verschiedenen Gründen einer ein- oder mehrmaligen Superrevision unterworfen worden. Die Berechnung und das Eintragen in die Specialcataloge wurde immer alsbald ausgeführt; ich erinnere mich nicht, dass jemals der nächste Beobachtungsabend unreducirte Revisionsbeobachtungen vorgefunden habe.

Ueber die Berechnung des Hauptcatalogs bez. des gedruckten Sternverzeichnisses und über die Zeichnung der zugehörigen Sternkarten habe ich hier nur zu bemerken, dass die Correctur der letzteren zugleich zu einer eingehenden Revision des Manuscripts des ersteren benutzt wurde, welche hoffentlich die gröberen und für das Auffinden der Objecte am Himmel gefährlicheren unter den begangenen Reductionsfehlern zum grössten Theil beseitigt hat. Bezüglich der kleineren, und namentlich bezüglich des Nachweises der Quellen für Meridianbeobachtungen (vierte Columne des Sternverzeichnisses) darf ich dies freilich nicht hoffen. Unter den weiterhin angeführten Berichtigungen sind vier derartige Fehler, die sich inzwischen bei dem Gebrauche des Sternverzeichnisses zu andern Zwecken unter etwa 5000 Sternen gefunden haben.

Uebrigens sind nicht alle Abweichungen der vierten Columne des Sternverzeichnisses von dem Drucke der verglichenen Cataloge für Fehler zu halten. Sie kommen oft bei Sternen vor, welche in den verglichenen Catalogen selbst mit Irrthümern behaftet sind. Die hierüber angelegten Fehlerverzeichnisse sind indessen noch nicht abgeschlossen und können deshalb erst später veröffentlicht werden.

6.

Mit den nun folgenden Zusammenstellungen über verschiedene Prüfungen und kleinere Resultate der Arbeit erlaube ich mir einige Personalien zu verbinden. Die erste Zone wurde 1876 Jan. 6 beobachtet, oder wenn man will Jan. 9, denn die frühere war ungenügend und wurde in der Folgezeit wiederholt. Mit Zone 610, 1881 März 28, war die zweimalige Durchbeobachtung, 686 Stunden in Rectascension umfassend, vollendet. Später, bis 1884 Febr. 16, kamen noch 16 Wiederholungszonen hinzu, und es liegen nunmehr, wie schon bemerkt, 626 Zonen nebst einigen Bruchstücken, = 700.1 Stunden mit 363922 Sternpositionen vor. Meine Gehülfen an der Uhr waren zuerst Herr Carl Werth aus Duisburg, von November 1876 an Herr Eduard Lobscheid aus Hesselbach, R.-B. Köln, und von September 1877 bis Juli 1881 Herr Wilhelm Kerper aus Coblenz. In Verhinderungsfällen hatten öfters, und seit August 1881 stets die jüngeren Astronomen der Sternwarte die Güte die Geschäfte an der Uhr zu übernehmen; in den Tagebüchern kommen die Namen Seeliger, de Ball, Kreutz, Scheiner und besonders Deichmüller vor, und es ist dadurch der Fortgang der Arbeit wesentlich gefördert worden. Die Beobachtungen am Fernrohr selbst sind sämmtlich von mir gemacht worden.

Mittelst der von mir hergestellten Reductionstafeln wurden die Sternörter zuerst von Herrn Werth, sodann zum grösseren Theil von dem früheren Ober-Telegraphen-Assistenten Herrn Peter Nahrhaft berechnet, auf dessen grosse Zuverlässigkeit ich aufmerksam wurde, als

derselbe bei den Längenbestimmungen des Jahres 1876 hier als Gehülfe thätig war. Er vereinigte die grösste Sicherheit im Rechnen mit einer ausserordentlichen Pünktlichkeit; leider starb derselbe am 14. September 1880, und ein neuer Wechsel wurde nöthig. Ueberhaupt haben berechnet

Werth . .	23 Tausend Sternörter
Nahrhaft . .	227
Dr. Kreutz .	13
Dr. Scheiner	58
ich selbst .	43

An der Bearbeitung der 504 Specialcataloge ist nach mir am meisten betheiligt Herr Dr. Kreutz, welcher kurz bevor, sowie während er die Assistentenstelle an der Sternwarte bekleidete, für 40 derselben die Grundzonen eintrug und 150 andere mehr oder weniger fertig stellte. An drei oder vier Specialcatalogen hat auch Herr Dr. Deichmüller mitgearbeitet. Das Ausziehen der übrig bleibenden Zweifel besorgte ich selbst, die zugehörigen Revisionskarten sind grösstentheils von Herrn Dr. Scheiner gezeichnet, einige auch von Herrn Dr. Matthiessen aus Stentoft in Schleswig und von Herrn Dr. Kreutz. Die Revisionen wurden versuchsweise schon im März 1876 begonnen, ihre Zahl ist fast übermässig gross (es sind reichlich 5700 Stellen nachgesehen worden), und sehr viele hätten unterbleiben können. Die Hauptmasse der Revisionen (4800) fällt in die Zeit von April 1881 bis März 1884. Hierdurch kamen zu den Notirungen in den Zonen noch etwa 30000 Grössenschätzungen, jedoch erheblich weniger Sternpositionen*). Den Hauptcatalog habe ich ganz allein ausgearbeitet und dabei die Excerpte der Zweifel einer sorgfältigen Superrevision unterzogen.

Die Originale der zu veröffentlichenden Sternkarten sind anfangs von Herrn Dr. Scheiner und von Herrn Ingenieur W. Scheiner aus Deutz gezeichnet worden, einige Zonen auch von Herrn Dr. F. Bolte aus Elsfleth und von mir selbst; den grössten Theil aber, ungefähr drei Viertheile, hat zwischen December 1883 und März 1885 Herr Gustav Schütz aus Unnau, R.-B. Wiesbaden, hergestellt und während desselben Zeitraums mir bei der Correctur dieser Originale und bei der daran geknüpften Revision des Hauptcatalogs wesentliche Dienste geleistet. Von dem Druck des Sternverzeichnisses sind ausser der letzten Revision zwei vollständige Correcturen gelesen; die eine von mir selbst, die andere zu $^3/_4$ von Herrn Dr. J. Bischof aus Lehe in Holstein, der Rest theils von mir, theils von Herrn Stud. O. Stumpe aus Hirschberg in Schlesien. Für die in dieser Einleitung gegebene Grössenvergleichung hat nach vorher unter uns besprochenem Plane Herr Dr. Scheiner den grösseren Theil der Rechnungen ausgeführt.

Bei der Bearbeitung der Zonen $-2°$ und $-22°$ habe ich zwar die aus den Zonen $-1°$ und $-23°$ an den Grenzen mitbeobachteten Sterne in den Specialcatalogen von den andern nicht getrennt, in dem eigentlichen Sternverzeichniss aber habe ich mich streng an die Grenzen $-2°\,0'$ und $-23°\,0'$ für 1855 gehalten, weil ich für die Nachbargegenden keine genauen Grenzen angeben kann, bis zu welchen sie vollständig durchmustert sind. Sonst haben hier die Sternörter denselben Werth wie die übrigen, und dazu berichtigen sie in $-1°$ mehrere Fehler der ersten Section. Daher habe ich sie nicht ganz unterdrücken wollen; am Ende dieser Einleitung sind sie, ganz nach den neueren Beobachtungen, in zwei Abtheilungen abgedruckt, jedoch ohne Nachweis in anderen Catalogen. Ein hinzugefügter Asteriscus deutet an, dass der Stern schon in der Zone $-1°$, Band 3, vorkommt.

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*) Hierzu kommen also noch von Bonner Beobachtungen nahe 12000 aus den Zonen der früheren Arbeit und 11000 von Schmidt, die aber für die Sterngrössen und Positionen des Hauptcatalogs nicht benutzt sind.

Das Hauptverzeichniss, in 21 Zonen von —2° ab nach Süden gehend geordnet, enthält 133659 Sterne, die oben erwähnten Ergänzungen enthalten nördlich 692, südlich 481. Zwischen —2° und —23° habe ich mit Herrn Schütz für jeden Quadratgrad, oder genauer, innerhalb jedes Declinationsgrades von 4^m zu 4^m der AR., die Sternmengen abgezählt, um die Vollständigkeit der Kartenzeichnung festzustellen. Die so erhaltenen, neuerdings controlirten Zahlen führe ich nebst ihren für ganze Stunden und Declinationsgrade gebildeten Summen hier im einzelnen auf, da sie, wenn auch zu einem klaren Einblick in die Vertheilung der Sterne nicht genügend, doch zur Prüfung anderer, mehr ins Einzelne gehender Zählungen dienen können.

	0^h	1^h	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
—2°	160	204	190	259	323	346	453	500	358	274	223	174
3	152	163	183	186	331	283	444	470	366	276	197	187
4	142	196	187	211	312	317	461	398	320	258	212	194
5	191	200	189	247	330	345	467	397	349	275	21,	224
6	207	200	201	212	268	324	516	535	358	254	234	199
7	174	186	187	197	234	307	459	608	368	240	214	170
8	193	190	200	205	245	289	424	481	356	265	236	204
9	220	183	192	218	265	254	519	524	367	255	210	227
10	235	198	178	226	262	278	495	513	359	249	205	205
11	210	193	191	206	266	317	408	448	310	256	222	214
12	204	185	206	203	274	304	413	550	458	286	266	214
13	201	180	211	220	251	291	465	568	379	263	277	183
14	212	182	209	218	224	287	384	656	376	280	234	197
15	201	166	175	175	229	322	380	609	444	278	220	219
16	180	194	188	217	263	313	412	526	391	285	222	201
17	194	194	213	191	231	329	425	554	418	315	238	254
18	181	186	169	214	249	303	380	489	402	272	260	221
19	179	206	222	213	275	255	336	556	377	295	264	232
20	199	199	183	200	225	276	436	667	408	310	245	231
21	170	206	185	221	289	278	397	514	432	289	256	239
22	199	158	191	200	259	305	388	450	347	334	249	211
Summe	4004	3969	4050	4439	5605	6323	9062	11013	7943	5809	4898	4400

	12^h	13^h	14^h	15^h	16^h	17^h	18^h	19^h	20^h	21^h	22^h	23^h	Summe
—2°	165	154	162	167	192	248	312	317	273	244	187	214	6099
3	171	172	147	148	185	176	247	303	335	257	188	196	5763
4	214	198	192	234	185	170	297	322	342	254	208	202	6026
5	207	175	203	229	165	165	310	284	305	240	218	188	6117
6	231	198	199	229	187	163	325	339	303	229	234	220	6365
7	207	221	190	237	200	163	295	317	321	209	230	219	6153
8	202	213	205	255	225	173	295	385	343	221	220	222	6247
9	191	229	220	230	198	151	354	356	297	261	203	202	6326
10	211	211	213	214	190	173	352	314	324	231	226	168	6230
11	201	225	212	196	226	238	338	361	292	228	244	204	6206
12	193	208	239	223	243	259	361	361	261	267	248	191	6617
13	166	173	243	274	201	312	380	347	270	251	238	177	6521
14	188	232	244	233	195	348	396	350	293	275	196	212	6621
15	180	212	223	218	206	370	416	318	333	249	207	195	6545
16	210	206	203	211	199	298	445	341	295	227	187	205	6419
17	217	237	246	239	222	315	456	378	320	260	228	204	6878
18	216	210	227	260	184	376	417	388	261	208	181	175	6429
19	227	181	211	287	220	323	455	407	306	195	181	167	6570
20	202	184	190	258	233	356	404	417	314	227	180	180	6724
21	177	192	191	246	239	345	401	356	308	237	194	176	6538
22	216	219	177	191	191	295	408	353	272	223	232	197	6265
Summe	4192	4250	4337	4779	4286	5417	7664	7314	6368	4993	4430	4114	133659

0h	0m	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60m
−2°	13	9	13	11	10	11	8	9	11	12	6	12	9	19	7	
3	12	9	13	11	8	8	8	9	10	10	14	15	10	7	8	
4	7	9	11	11	8	9	7	8	16	8	9	8	9	13	9	
5	16	10	14	13	12	8	13	8	18	13	14	11	12	15	14	
6	15	14	14	15	15	12	6	17	12	16	13	15	14	16	13	
7	13	9	15	11	10	12	15	10	14	13	7	9	18	10	8	
8	14	14	12	13	14	16	8	17	15	16	13	11	12	8	10	
9	21	9	16	14	19	15	16	15	13	14	17	13	13	12	13	
10	13	18	16	14	16	13	17	13	21	21	10	16	16	19	12	
11	20	12	12	13	15	13	13	13	14	14	19	10	15	13	14	
12	11	16	14	12	15	15	13	18	9	12	14	12	13	19	11	
13	17	16	17	13	14	10	11	12	11	13	7	13	17	17	13	
14	18	12	16	10	11	12	16	11	16	12	15	15	12	19	17	
15	19	14	18	7	12	20	13	13	16	10	12	12	13	10	12	
16	17	20	9	13	14	10	13	13	13	10	12	9	10	7	10	
17	11	13	13	12	11	10	14	21	13	20	7	13	13	14	9	
18	9	21	8	8	12	18	18	8	12	12	10	14	10	9	12	
19	9	13	13	12	14	10	8	14	12	15	15	7	8	15	14	
20	12	17	11	12	13	17	9	21	12	8	14	16	13	12	12	
21	10	8	17	6	11	10	7	17	11	14	16	6	10	16	11	
22	18	11	14	12	16	10	14	14	12	12	7	17	13	14	15	

3h	0m	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60m
−2°	14	14	19	11	18	18	15	19	19	15	20	18	15	12	32	
3	9	14	13	11	8	11	13	12	11	11	12	12	18	17	14	
4	14	17	12	11	19	14	13	14	14	11	13	15	15	17	12	
5	13	8	17	15	30	15	17	12	19	18	19	12	14	15	23	
6	10	12	17	20	9	14	12	11	19	17	10	23	15	9	14	
7	12	16	5	9	11	14	16	19	13	17	11	11	13	13	17	
8	13	12	15	18	12	10	11	19	15	17	9	19	11	9	15	
9	10	14	18	15	12	23	18	11	17	12	14	15	12	14	13	
10	21	10	10	10	17	12	14	11	11	17	14	19	29	15	16	
11	9	13	20	14	12	14	16	11	16	15	13	12	10	18	13	
12	11	15	12	9	10	14	10	6	14	14	20	16	16	16	20	
13	11	10	12	12	11	23	16	18	12	22	12	19	13	17	12	
14	8	15	20	8	20	13	14	14	18	14	11	18	15	16	14	
15	9	11	13	11	12	12	10	9	13	12	22	9	8	13	11	
16	22	15	13	13	13	11	11	14	14	12	9	16	22	17	15	
17	8	20	10	13	13	16	13	11	14	5	18	9	14	16	11	
18	12	17	19	11	14	12	9	13	13	9	11	20	17	19	18	
19	15	12	16	15	10	16	13	10	14	14	9	19	19	10	21	
20	14	9	11	11	12	13	15	17	8	12	18	13	16	14	17	
21	8	17	14	16	10	12	15	10	12	20	15	20	15	19	18	
22	12	11	10	12	13	10	13	10	16	19	15	14	16	14	15	

1h	0m	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60m
−2°	16	11	7	11	11	13	23	14	13	15	12	12	15	14	17	
3	8	8	9	11	13	11	14	5	13	15	8	15	9	16	8	
4	8	16	14	15	15	14	13	15	10	8	13	14	10	16	15	
5	14	11	19	15	9	12	13	10	10	13	11	14	20	18	11	
6	18	14	11	13	9	13	11	13	17	13	12	11	13	16	16	
7	18	7	11	11	12	14	13	12	10	11	16	12	15	11	13	
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16	19	13	12	16	17	15	9	13	22	12	14	11	9	12	11	
17	19	21	11	18	10	9	17	8	16	14	13	13	13	10	12	
18	11	9	10	8	18	13	16	14	9	7	13	15	9	7	16	
19	14	10	12	8	10	11	9	8	13	12	12	19	9	11	9	
20	7	13	10	14	7	13	9	11	12	15	6	7	16	19	21	
21	14	13	14	11	8	11	10	15	9	6	14	9	15	9	18	
22	18	14	10	8	15	6	14	17	9	14	14	17	15	15	11	

Die Zonen am Schröder'schen Fernrohr besitzen hiernach eine nicht unbedeutend grössere Sterndichtigkeit als die am Cometensucher. Nach Argelander (Band 5, Einleitung Nr. 2) entfallen in den letzteren auf 1797 Zonen, die er eben so vielen Stunden gleich setzt, 850000 einzelne Beobachtungen, oder im Mittel 473 auf die Stunde. Genauer sind es 1894 Beobachtungsstunden, und noch genauer scheint mir die Schätzung zu werden, wenn man die Zonen, welche wegen zu grosser Unvollkommenheit am Cometensucher direct wiederholt sind, ausschliesst; es bleiben dann 1830 Stunden mit 836000 Beobachtungen, d. i. 457 Sterne in 1^h. Die entsprechende Zahl für das Schröder'sche Fernrohr ist 519, gleichviel, ob die letzten 16 Zonen berücksichtigt werden oder nicht. Das Verhältniss dieser beiden Zahlen ist indessen nur ungefähr das der durchschnittlichen Arbeitsleistung beim Beobachten, gibt aber noch nicht die Vergleichung der wirklichen Sterndichtigkeit, da die früheren Zonen theils $2^\circ 18'$, theils $3^\circ 17'$ breit sind, während die neueren nur $1^\circ 41'$ in Declination fassen; auch ist in beiden Arbeiten die mittlere Declination ganz verschieden. Abgesehen von den übergreifenden Minuten sind nun die Zonen am Cometensucher von -2° bis $+37^\circ$ durchaus 2° breit beobachtet, und zwar, wie bekannt, doppelt, mit Ausnahme von $8^1/_2$ Stunden (Decl. -2° bis $+14^\circ$) in 5 Uhr; dieser Theil der älteren Arbeit streift also über 0.634 der Kugelfläche. Von $+67^\circ$ bis $+82^\circ$ sind die Zonen 3° breit, und zwar bis $80^1/_2{}^\circ$ ebenfalls doppelt beobachtet (Fläche 0.068); dazwischen gemischt, nämlich 2° breit in der Fläche 0.132, 3° in 0.187. Die als je einmal durchmustert zu betrachtenden 42083 Quadratgrade vertheilen sich also auf die schmalen und auf die breiten Zonen im Verhältniss 0.766 : 0.255, und um nun die bisher ausser Acht gelassene grössere Breite der Zonen, d. i. die Vergrösserung der durchmusterten Fläche durch die in die zweitnächste Zone übergreifenden Theile der Scala zu berücksichtigen, ist die erste Quote mit $\frac{138}{120}$, die zweite mit $\frac{197}{180}$ zu multipliciren. Die 836000 Beobachtungen gehören mithin zu rund 47800 Quadratgraden, oder eine Aequator-Zone von 1^h Ausdehnung in Rectascension und $1^\circ 41'$ in Declination enthält durchschnittlich 442 Sterne.

Für die Zonen am Schröder'schen Fernrohr ist $\cos\delta$ durchschnittlich 0.9709, eine Stunde im Aequator müsste also durchschnittlich 534 Sterne aufweisen; diese Zonen sind also im Verhältniss 1.21 : 1 reicher als die am Cometensucher.

Zu einem fast gleichen Resultat gelangt man, wenn der Vergleichung statt der unmittelbaren Beobachtungen in den Zonen die constatirten Sterne, wie sie in dem Sternverzeichnisse stehen, zu Grunde gelegt werden. Nach dem Verhältniss der Flächen wären zwischen -2° und -23° statt der 324198 Sterne der früheren Arbeit deren 111470 zu erwarten, eine Zahl, die zu der wirklichen im Verhältniss 1 : 1.20 steht. Sucht man aber den Einfluss der Milchstrasse dadurch zu eliminiren, dass man nur die gleichen nördlichen Declinationen vergleicht, so findet sich, da zwischen $+2^\circ$ und $+23^\circ$ 107329 Sterne verzeichnet sind, das Verhältniss 1 : 1.245. Sieht man den Unterschied dieser letzteren Zahl von der obigen 1.21 nicht als zufällig an, so muss man darin eine Andeutung erblicken, dass die neueren Zonen weniger verlorene, d. i. nur einmal beobachtete und deshalb nicht in das Verzeichniss aufgenommene Sterne enthalten. Noch mehr tritt dies hervor, wenn man in Betracht zieht, dass für die frühere Arbeit ausser den hier allein berücksichtigten Beobachtungen am Cometensucher noch 137000 aus den Revisionszonen und 14000 von J. Schmidt verwerthet worden sind; und in der That wird es auch ohne genauere Abzählung schon durch einen Blick in die Specialcataloge bestätigt. Dennoch beträgt bei mir die Zahl der verlorenen Sterne viele Tausende; sie gehören aber nur zum allergeringsten Theile den Grössen $9^m.5$ und $9^m.6$ an, und ich habe deshalb die nicht geringe Arbeit ihrer Abzählung nicht für lohnend genug gehalten.

Nach der gewöhnlichen Annahme über die Zunahme der Zahl der Sterne mit abnehmender Helligkeit könnte man aus dem vorigen folgern, dass jetzt die untere Helligkeitsgrenze

etwa $^1/_5$ Grössenklasse tiefer liegt als früher. Wahrscheinlicher aber ist die Deutung, dass Section 4 die schwächsten Grössenabtheilungen der drei ersten Sectionen in grösserer Vollständigkeit enthält, oder dass beide Ursachen zusammen wirken.

7.

Bei der Prüfung des Sternverzeichnisses auf Vollständigkeit bezüglich der helleren Sterne habe ich im ganzen die gleichen Wege eingeschlagen, wie Argelander, Band 3, S. XV ff. Es enthalten indessen die in den fünfziger Jahren noch nicht veröffentlichten, jetzt aber von mir verglichenen Cataloge durchschnittlich viel schwächere Sterne, als die Zonen von Lalande und Bessel, aus deren Vergleichung Argelander seinerzeit das Resultat abgeleitet hat, dass nur etwa 30 Sterne bis zur neunten Grösse der Aufzeichnung in den ersten drei Sectionen des Sternverzeichnisses entgangen sind. Selbst bezüglich der südlichen Zonen von Argelander ist jenes der Fall, noch mehr bei Schjellerup, Lamont und zum Theil in den Washington-Zonen. In so fern also sind meine Prüfungen jedenfalls strenger als die für die Nordhalbkugel. Auf der andern Seite ist es mir, wie bereits bemerkt, theils nicht lohnend erschienen, alle fehlenden Sterne aus den Münchener und den Washingtoner Zonen am Himmel nachzusehen, theils ist diese letztere Untersuchung noch nicht vollendet, und so mögen vielleicht später, gegen meine jetzige Annahme, zu den weiterhin als ohne erkennbaren Grund in den Zonen fehlend angegebenen Sternen noch einer oder zwei hinzukommen.

Ich habe zunächst aus einer grösseren Anzahl von Zonen diejenigen Fälle herausgesucht, wo ein in den regelmässig verglichenen Catalogen vorkommender Stern in einer Hauptzone beobachtet ist, während er in der anderen, oder wenn für die Gegend drei Hauptzonen beobachtet sind, in einer der beiden andern ausgelassen ist. Die Grenzzonen, sowie die Specialdurchmusterungen der Sternhaufen sind hierbei nicht berücksichtigt, auch, wie natürlich, die bekannten Veränderlichen nicht mitgezählt. Wie zu erwarten, zeigte sich die Gefahr, einen Stern zu übersehen, um so grösser, je reicher die durchmusterte Gegend war; am grössten in 7 Uhr, insbesondere in den südlicheren (in grösseren Zenithdistanzen beobachteten) Partien; sodann in 6 und 8 Uhr, wo die abgezählten Zonen schon theilweise dem Grenzgebiete der Milchstrasse angehören. In dem andern Theile der Milchstrasse, in 18^h und 19^h, liegen die Verhältnisse viel günstiger, und die dem Hauptstrome hier vorausgehende Abzweigung in 17^h verhält sich schon ganz wie die Gegenden ausserhalb der Milchstrasse*). Die genannten Stunden habe ich ganz abgezählt, für die übrigen aber eine Auswahl von sehr gleichförmig vertheilten Zonen getroffen. Das Resultat dieser Zählungen ist das folgende.

Es fehlen unter n in den verglichenen Catalogen vorkommenden und wirklich existirenden Sternen in einer Hauptzone p hellere (bis 9^m3 abwärts) und q schwächere Sterne (9^m4 und kleinere):

in 6^h, 7^h, 8^h	$n = 5972$	$p = 55$	$q = 19$
in 18^h, 19^h	3952	25	9
sonst	7300	40	14

Aus den für die schwächeren Sterne geltenden Zahlen q lassen sich der Unvollständigkeit

*) Uebereinstimmend mit Struve's Abzählungen aus Bessel's Zonen (Études d'astronomie stellaire, p. 56) und mit den Bonner Arbeiten über den Nordhimmel zeigen meine Zonen die Milchstrasse in Monoceros, Canis major, Argo viel reicher als in Sagittarius, Scutum, Aquila. Bekanntlich geben W. Herschel's Aichungen das entgegengesetzte Resultat.

der Cataloge halber allgemeine Schlüsse nicht ziehen; was die helleren Sterne anlangt, so ergibt sich aus den Zahlen p und n, dass je ein Stern fehlt

in dem vorausgehenden Theile der Milchstrasse unter 109 Sternen
in dem folgenden Theile . . . . . » 158 »
ausserhalb der Milchstrasse . . . . . » 182 »

Für 7^h allein ist $n = 2152$, $p = 25$, $q = 9$, doch ist die Gefahr, dass in diesen reichsten Gegenden der Arbeit mehr hellere Sterne als sonst entgangen seien, dadurch wieder auf das gewöhnliche Maass herabgebracht, dass die weniger gut gelungenen Zonen wiederholt beobachtet worden sind. Die Summe der obigen Zahlen gibt

$$n = 17224,\ p = 120,\ q = 42,$$

also $p = n : 144$, doch ist die Bedeutung der letzten Zahl eine geringe, da man bei dem Urtheil über den Grad der Vollständigkeit der Arbeit nothwendig die verschiedene Sternfülle der einzelnen Gegenden berücksichtigen muss.

Bei diesen Untersuchungen sind übrigens die Struve'schen Begleiter von Doppelsternen ausser Acht gelassen; die entfernteren, in mehr als 20″ Distanz von dem Hauptstern befindlichen sind zwar fast stets getrennt vom letzteren beobachtet, wenn sie einigermaassen hell sind; aber von den schwächeren, schon von etwa 8ᵐ.5 an, fehlen viele, die gewiss beobachtet worden wären, wenn die Zeit ein sorgfältiges Beurtheilen des Aussehens eines jeden Sternes gestattet hätte. In der folgenden Untersuchung, nämlich wie viele und welche Sterne in den Zonen gar nicht vorkommen, hatte ich diese Begleiter über 20″ Distanz ursprünglich mitgezählt, und es fanden sich so im ganzen 23 fehlende Sterne von 9ᵐ.3 oder heller, und 13 schwächere. Es liesse sich allerdings, wie auch die folgende Zusammenstellung zeigt, vielleicht noch darüber rechten, ob nicht einzelne doch in den Zonen vorkommen und daselbst nur mit einem Fehler behaftet sind.

Unter diesen 36 Sternen finden sich nun zunächst 16 hellere und 5 schwächere Begleiter, die ihren Hauptsternen auf Entfernungen zwischen 20″ und 32″ nahe stehen. Die übrigen sind die folgenden; ich füge ihnen, wenn andere Beobachter denselben grössere Helligkeit zugeschrieben haben als ich bei den Revisionen, die betreffenden Angaben bei, indem ich die Autorität für letztere mit denselben Abkürzungen bezeichne, wie im Sternverzeichniss.

A. Hellere Sterne.

1.	8ᵐ.8	$4^h37^m23^s.6$		—21° 0′.1		A 9ᵐ. Das Fehlen dieses Sternes ist höchst auffällig, wenn man nicht annehmen will, dass eine Beobachtung in den Zonen, welche die Grösse 9ᵐ.3, die Declination 3′.8 nördlicher gibt, sich nicht auf den daselbst stehenden, weit schwächeren Stern —20° 922 bezieht, sondern um —1ᵖ zu corrigiren ist.
2.	9.0	5 13	26.1	— 8	10.1	8ᵐ pr. 0′.1 0′.6 A ($d = 35″$). Die Gegend ist nur einmal im Schröderschen Fernrohr durchmustert.
3.	9.2	7 4	34.2	— 4	42.4	K 9ᵐ.
4.	9.0	10 59	16.3	—12	37.5	8ᵐ pr. 0′.8 0′.5 A ($d = 33″$).
5.	9.0	17 12	42.4	—12	41.7	4ᵐ.5 pr. 1′.8 0′.6 A.
6.	9.2	18 12	26.5	—16	5.0	A 9ᵐ. In sternreicher Partie des Omega-Nebels, vielleicht in einer Zone als 9ᵐ.5 und AR. 2ˢ zu gross beobachtet, wo aber wirklich ein schwächerer Stern (—16° 4824) steht.
7.	9.2	18 43	30.0	— 6	31.1	Nicht getrennt gesehen; in Kirch's Sternhaufen im Schilde, der sich in den Zonen mit Nebellicht vermischt zeigt.
	9.2		30.7		30.4	

B. Schwächere Sterne.

8.	$9^m.9$	6^h	22^m	$5^s.6$	-20°	$48'.3$	A $9^m.5$.
9.	10	6	37	6.2	— 6	58.9	Sj in notis $9^m.5$.
10.	10	6	48	38.0	— 4	51.3	Sj in notis; $8^m.7$ pr. 3^s $0'.4$ A.
11.	9.4	6	58	47.8	—19	6.4	A $9^m.5$.
12.	9.7	17	59	3.6	—22	52.4	CZ $9^m.5$, Markree Catalogue 11^m; $8^m.7$ pr. $0^s.9$ $1'.1$ A.
13.	9.5	18	5	3.0	—21	4.9	WC $9^m.4$; 4^m seq. $2^s.8$ $0'.6$ A.
14.	10	21	41	28.2	— 2	0.5	B $9^m.5$.
15.	9.4	23	8	14.3	— 9	52.1	K 9^m, L $9^m.5$, M 10^m; 5^m seq. $2^s.6$ $0'.6$ A.

Ich habe diese Sterne einzeln aufgeführt, weil ich mich ausser Stande fühle, aus der gegebenen Zusammenstellung ohne Willkür ein allgemeines Resultat abzuleiten. Von den Begleitern hellerer Sterne in 20″ bis 32″ Abstand würden ohne Zweifel im Sternverzeichniss ein grosser Theil fehlen, wenn nicht die Verzeichnisse von W. Struve und J. Herschel verglichen worden wären, und ich möchte die Zahl der selbst jetzt noch fehlenden auf vielleicht 3 Procent schätzen, wenn nur die Grössen $9^m.2$ bis $9^m.4$ oder $9^m.5$ in Betracht gezogen werden. Denn da die Helligkeit solcher Sterne leicht unterschätzt wird, so mögen die Einzelrevisionen nicht auf genügend viele Objecte ausgedehnt worden sein. Nicht viel geringer mag der Procentsatz der fehlenden Sterne bis etwa 40″—45″ Abstand sein, wo die grössere Leichtigkeit der Trennung vom Hauptstern im Endresultat dadurch ausgeglichen ist, dass dieselben von Struve nicht berücksichtigt sind, so dass ich auf manche nur durch die weit unvollkommeneren Herschel'schen Verzeichnisse aufmerksam wurde. Erst von der letztgenannten Grenze ab wird es zu den grossen Ausnahmen gehören, wenn einer der helleren Sterne neben seinem (optischen oder physischen) Hauptsterne übersehen ist. Ja, auch diese Ausnahmefälle werden überwiegend nur die Grössenabtheilung $9^m.3$ und höchstens noch $9^m.2$ betreffen. Denn da in der Regel die Begleiter in diesen Abständen nur bei sehr grosser Helligkeitsdifferenz gegen den Hauptstern übersehen worden sind, die hellen Hauptsterne aber bis auf kleine Reste in den Zonenbeobachtungen von Bessel, Argelander, Lamont vorkommen, wo überall, wenn irgend Zeit vorhanden war, die Begleiter bis zur neunten Grösse mitbeobachtet sind, so sind ohne Zweifel fast alle hierher gehörigen Mängel meiner Arbeit bei den Einzelrevisionen aufgefunden worden und im Sternverzeichniss berücksichtigt. Ungünstiger liegt die Sache bei den schwächeren Sternen, soweit sie nicht früher etwa von Schjellerup oder im Markree Catalogue angemerkt oder auf den verglichenen Kartenwerken verzeichnet worden sind. Dass hier sogar in 66″ Abstand vom Hauptstern ein noch nicht der zehnten Grössenklasse angehöriger Stern übersehen (oder für zu schwach gehalten) werden konnte, zeigt der oben angeführte Stern Nr. 12 = —22° 4574. Aber selbst diese Distanz ist noch kleiner als der dritte Theil derjenigen, welche Argelander (Band 3, S. XV ff.) bei seinen Prüfungen der Vollständigkeit der früheren Arbeit als hinreichend erachtet hat, um daraus das Fehlen eines Sternes neben einem helleren zu erklären, d. h. kleiner als bei einer Vergleichung beider Arbeiten nach dem Verhältniss der Vergrösserungen zulässig wäre.

Sehe ich also von Doppelsternen bis 45″ Entfernung ab, und berücksichtige auch den Stern Nr. 6 nicht, weil die sternhaufenartige Gegend ohnehin als einer Specialrevision bedürftig erkannt war*), so bleiben von den helleren Sternen eigentlich nur drei, nämlich Nr. 1, 3 und 5 der obigen Zusammenstellung, oder wenn man Nr. 15 als (nach der Grössenangabe bei Bessel

*) Die Revision wurde mir grossentheils durch die Vergleichung eines schönen Kärtchens des Nebels erspart, das ich der Güte des Herrn Tempel verdanke.

und der Thatsache des Vorkommens bei Lalande) möglicherweise in der Helligkeit unterschätzt noch hinzuzählt, vier als wirklich fehlend übrig, und von diesen stehen zwei innerhalb einer Bogenminute bei hellen Sternen, ein Stern $9^{m}.0$ bei ν Serpentis, ein schwächerer bei ψ^1 Aquarii. Die Zahl der verglichenen Objecte ist etwas über 27000, doch gehört von diesen eine wenig genau zu bestimmende Anzahl einer schwächeren Grössenklasse an, die hier eigentlich als der Abtheilung B entsprechend ausser Acht zu lassen ist. Man wird deshalb die Zahl der Objecte, unter welchen jene 2 + 2 Sterne fehlen, zu 24000 annehmen können.

Mit den Angaben in Band 3, S. XVII verglichen erscheint dies Resultat nicht ganz so günstig, wie ich es V. J. S. 16, S. 273 dargestellt habe. Doch scheint mir dabei in Betracht zu ziehen, dass die Kleinheit der Zahl von (entweder in einer Zone oder ganz) fehlenden Sternen schon an sich dem Urtheil über die Vollständigkeit der Arbeiten einigen Spielraum lässt. Ob man bei der älteren Arbeit unter 26000 Sternen 7 oder 9 bis 10 (wie man wohl nach Band 3, S. XVI als richtiger annehmen könnte) als ohne besonderen Grund fehlend ansieht, und bei der jetzigen 4 oder 2 unter 24000, ändert die Schätzung über die relative Vollständigkeit durchaus. Schon bei der älteren Arbeit ist, wenn auch im ganzen mehr als 30 Sterne 9^{m} *) fehlen, die Vollständigkeit sehr zufriedenstellend, und bei der jetzigen noch etwas grösser, wie trotz der grösseren Sternfülle aus verschiedenen Gründen von vornherein zu erwarten war. Ob aber die Zahl der wirklich der Arbeit entgangenen Sterne bis $9^{m}.3$ herab, mit der nöthigen Einschränkung für die Doppelsterne, auf 5, 6, 8 oder 10 zu schätzen ist, wage ich nicht zu entscheiden, doch würde ich die letzte Zahl schon ganz unerwartet gross finden.

Ueber die Vollständigkeit bezüglich der schwächeren Sterne bleibt das Urtheil weit unbestimmter. Ich hoffe es demnächst auf eine andere Art sicherer zu machen.

Im Verlauf der Arbeit sind viele Sterne auf Veränderlichkeit ihres Lichtes untersucht worden und mehrere derselben werden noch weiter verfolgt, aber nur die folgenden drei sind mit Sicherheit als veränderlich erkannt worden:

-2°	1581	$7^{m}.5 - < 9^{m}.5$	$6^{h}\,15^{m}\,25^{s}.3$	-2°	$7'.6$
-17	4142	9.3 — 12.2	14 32 18.0	-17	1.8
-7	4267	9.0 — < 11	16 13 36.3	-7	21.0

8.

Um über die Genauigkeit der Positionen des Sternverzeichnisses zu einem genäherten Urtheil zu gelangen, habe ich zuvörderst zu ermitteln gesucht, ob für die Rectascensionen ein von der Helligkeit der Sterne abhängiger Unterschied vorhanden ist, wie er für die ältere Arbeit, wenigstens in den südlicheren Partien, in nicht unbedeutender Grösse besteht. Das Resultat war aber, ebenso wie bei dem allergrössten Theile der früheren Revisionszonen, ein negatives, und dies war schon durch die Erfahrungen bei der Berechnung der Tafeln zur Reduction der Beobachtungen auf 1855 angedeutet, wo ich häufig schwache Sterne des Markree Catalogue als Bestimmungssterne verwandt, und die kleinen constanten Unterschiede, die sich hier in einzelnen Zonen zeigten, eben so oft in positivem wie in negativem Sinne wirkend gefunden hatte. Die

*) Es ist mir nicht ganz klar, ob Argelander unter dieser Bezeichnung als untere Helligkeitsgrenze $9^{m}.0$ oder $9^{m}.2$ verstanden wissen wollte. Ist das erstere der Fall, und lässt man die Begleiter von helleren oder gleich hellen Sternen innerhalb 3'—4' Abstand ausser Betracht, so ist nach den seitdem gemachten Erfahrungen die Zahl der fehlenden eher noch geringer.

Ursache der grösseren Unterschiede in der früheren Arbeit scheint demnach zum grössten Theile in der schwierigen Sichtbarkeit des Stundenstrichs zu liegen; es wurden nicht sowohl die schwachen Sterne zu früh beobachtet, als vielmehr die hellen, aus denen die Reductionen der Uhrzeiten berechnet wurden, zu spät, indem häufig statt des Antritts ihr gänzliches Verschwinden notirt wurde. Die Fehler der Reductionstafeln werden bei der grossen Zahl von fast durchweg dreissig gut bestimmten und gut in der Zone vertheilten Bestimmungssternen in beiden Coordinaten sehr klein sein, selbst die nicht erkannten groben Fehler in den Anhaltsternen, wie Fehler von 1°, oder 30″ bei Lalande, oder 1 Schrauben-Revolution bei Bessel haben keinen nennenswerthen Einfluss mehr, grössere aber konnten nicht leicht unentdeckt bleiben. Die Neigung des Stundenstrichs ist für jede Zone besonders ermittelt worden, und wo ihr Einfluss auf die Rectascensionen am grössten ist, an den Grenzen der Zonen, concurrirt meist eine Beobachtung mehr als sonst, so dass die Wahrscheinlichkeit, dass sich kleine zurückgebliebene Unsicherheiten ausgleichen, vermehrt ist. Das gleiche gilt für die Declinationen bezüglich zeitweiser Abweichungen des wirklichen Scalentheils von dem jedenfalls hinreichend sicher bestimmten (und nur jeweils für Refraction verbesserten) mittleren. Für solche Abweichungen lassen sich mehrere Ursachen denken; die Einstellung des Oculars wurde allerdings durch eine an der Auszugröhre befindliche Scala häufig controlirt. Bei den nachbeobachteten Sternen ist es mir manchmal vorgekommen, als wichen die Declinationen in dem Sinne ab, dass das Intervall gegen den nächsten Theilstrich zu klein geschätzt sei. Doch kommen auch Abweichungen im entgegengesetzten Sinne vor, auch sind solche Beobachtungen zu selten, um diesen Umstand mit Aussicht auf Erfolg genau zu untersuchen. Im ganzen ist der Einfluss dieser Fehlerquelle jedenfalls nur gering.

Aus diesen Gründen habe ich bei der Berechnung des Hauptcatalogs allen Beobachtungen, soweit sie nicht im Original als minder gut bezeichnet sind, gleiches Gewicht gegeben; die verhältnissmässig wenigen mit geringerem Gewichte berücksichtigten Original-Notirungen sind meist unsichere Zeitsecunden, sei es, dass die Aufschreiber der Zeit nicht ganz sicher waren, sei es, dass ich selbst die Zeit als einer Correction von einer, zwei oder höchstens drei Zeitsecunden bedürftig angemerkt hatte. Ist ein Stern noch später nachbeobachtet, so gilt er als nur in Declination bestimmt.

Die constanten Fehler des Sternverzeichnisses können demnach im ganzen nur gering sein, und haben sich auch bei verschiedenen Prüfungen so erwiesen. Für die Bestimmung der zufälligen Fehler habe ich aus den Stunden 0, 6, 12 und 18 je 5 Grade der Declination untersucht, und für die Quadratsummen der Unterschiede zwischen Sternverzeichniss und Meridian-Catalogen erhalten (Einheiten Zeitsecunde und Bogenminute):

in	0^h	für	201	Sterne	in	AR.	68.82	in Decl.	11.70
»	6	»	460	»	»	»	185.06	» »	33.88
»	12	»	278	»	»	»	80.96	» »	12.23
»	18	»	454	»	»	»	174.46	» »	29.54

Obwohl nun hier die groben Fehler, die sich dem Gauss'schen Fehlergesetz nicht fügen, weder bei meinen noch bei den fremden Beobachtungen vollständig ausgemerzt sind, und deshalb die grössten Fehler etwas häufiger vorkommen als die Theorie zulässt, so habe ich doch aus den obigen Zahlen die wahrscheinlichen Fehler meiner Positionen auf die gewöhnliche Art abgeleitet. Unter Annahme der wahrscheinlichen Fehler einer Position aus den Catalogen gleich 0ˢ.12 und 1″.8 (schon wegen der Abrundung auf Zehntheile der Zeitsecunde und Bogenminute jedenfalls nicht zu gross) finde ich für die genannten Stunden der Reihe nach:

w. F. in AR. bez. ± 0:376 ± 0:411 ± 0:344 ± 0:400
in Decl. ± 0:160 ± 0:181 ± 0:138 ± 0:169

und im Mittel aus allen 1393 Sternen

± 0:390 und ± 0:166.

Es zeigen sich aber hier deutlich Unterschiede der verschiedenen Stunden, die einen Einfluss der Sterndichtigkeit verrathen. Ich habe deshalb noch vier Zonen aus der reichsten Stunde, Hora 7, untersucht. Für 443 Sterne finden sich hier die Quadratsummen der Unterschiede 135.22 und 24.96, und daraus für meine Positionen die wahrscheinlichen Fehler

± 0:353 und ± 0:157,

also kleiner als in 6^h und 18^h. Doch hat dies letztere im wesentlichen einen andern Grund. Für die 443 Sterne in 7^h concurriren, da hier mehrere Zonen wiederholt sind, 1325 Beobachtungen, also beruht durchschnittlich jede Position auf 3.0 Beobachtungen, bei den vorher verglichenen aber jede auf 2.3 Beobachtungen. Für die einzelne Beobachtung folgt also der wahrscheinliche Fehler in 7^h

± 0:613 und ± 0:272,

in den andern Stunden

± 0:591 ± 0:252,

und scheidet man aus den letzteren die nach 7^h am meisten sternreiche Hora 6 aus, so findet sich für diese (bei der Durchschnittszahl von 2.25 Beobachtungen für jeden Stern)

± 0:616 ± 0:264.

Alle 4530 Beobachtungen von 1836 Sternen zusammengenommen ergeben endlich diese Fehler

± 0:595 ± 0:257,

Zahlen, welche überdies durch die provisorischen Ermittelungen 0:7 und 0:26 aus ungefähr 700 Sternen gleich ebenso vielen Beobachtungen in den frühesten Zonen wenigstens für die Declination gut bestätigt werden. Für die Rectascensionen zeigt diese Vergleichung einen Fortschritt in der erreichten Genauigkeit an, den ich wesentlich den genauer gewordenen Aufzeichnungen der Zeit durch den Gehülfen an der Uhr zuschreibe.

Als Endresultat ist also ein wahrscheinlicher Fehler der einzelnen Beobachtung von durchschnittlich 0:60 in AR. und 0:26 in Decl. anzunehmen, für die reicheren Zonen bis zu 0:02 oder 0:03, bez. 0:015 mehr, für die ärmsten etwas weniger; und der wahrscheinliche Fehler einer Position des Sternverzeichnisses ist gleich diesen Zahlen dividirt durch die Quadratwurzel aus der Zahl der concurrirenden Beobachtungen. Diese Anzahl kann durchschnittlich zu 2.45 angenommen werden, womit der wahrscheinliche Fehler einer Position im Mittel folgt

± 0:38 und ± 0:16.

Im Verlaufe der Arbeit sind durch die Vergleichung der Sterncataloge unter sich und mit den Durchmusterungszonen, eventuell auch mit neueren, von den Herren Deichmüller oder Scheiner angestellten hiesigen Meridianbeobachtungen mehrere Eigenbewegungen aufgefunden worden. Soweit diese einen Betrag von jährlich ungefähr 0:25 überschreiten, stelle ich die betreffenden Sterne hier zusammen.

— 6°	79	7m8	0h 21m 54:0	— 6° 42:2	E. B.	—0:01	—0:25
—20	643	8.0	3 21 16.5	—20 18.8		+0.03	0.0?
— 3	592	7.2	3 33 0.7	— 3 41.3		+0.05	—0.23
— 3	1123	8.7	5 24 7.9	— 3 43.1		+0.04	—2.15
— 4	3439	8.0	13 5 41.6	— 4 14.9		+0.02	....
— 4	3665	7.6	14 12 6.0	— 4 28.6		—0.04	—0.05
—21	4009	8.3	14 51 35.5	—21 25.1		—0.04	—0.5
—15	4041	9.2	15 2 15.5	—15 47.5		—0.066	—3.48
	4042	9.0	16.0	42.2			
—13	4418	8.3	16 16 13.8	—13 17.6		—0.01	—0.3
—19	5889	8.2	20 32 31.5	—19 17.3		0.00	—0.4

Die Bewegungen des ersten und siebenten Sternes sind inzwischen auch von anderen Seiten aufgefunden und angezeigt worden, bei dem zweiten und fünften sind die beobachteten Declinationen widersprechend. Ueber die starke gemeinsame Bewegung des verhältnissmässig lichtschwachen Sternpaares —15° 4041 und 4042 habe ich bereits A. N. Band 100, Nr. 2377 berichtet.

9.

Die wichtigste der hierhergehörigen Untersuchungen ist die über die Genauigkeit und das allgemeine Verhalten der Sterngrössen, und ich habe deshalb hierfür eine grössere Reihe von Vergleichungen theils selbst gemacht, theils namentlich durch Herrn Dr. Scheiner ausführen lassen. Dennoch ist dieser Theil noch zu keinem ganz befriedigenden Abschluss gelangt; denn das Werthvollste wäre hier die directe Verbindung mit den Grössen der früheren Arbeit gewesen, und gerade diese hat sich als nahezu unthunlich erwiesen, indem zu wenig zweifelfreie unmittelbare Vergleichungspunkte vorhanden sind. Aus verschiedenen Gründen sind die Grössenangaben in den Zonen am Cometensucher, die 1852 und 1853 südlich von —2° von Thormann und von mir beobachtet worden sind, zu einem sicheren Anschluss beider Arbeiten an einander nicht geeignet. Thormann's Grössen sind mit denen von Krueger und mir, sowie den späteren, die Argelander am Meridiankreise geschätzt hat, nicht völlig gleichartig; die meinigen aber gehören zu meinen allerersten, sind wenig sicher und oftmals stark überschätzt. Bei den weiter in Betracht kommenden südlichen Partien der Zonen, deren Nullpunkte in —2:0 liegen (dieselben sind anfangs meist bis —3° 7′ ausgedehnt) und den Grenzgegenden der Zonen mit dem Nullpunkte —1° gehen zunächst ebenfalls noch mehrfach Zonen von Thormann ein, und ausserdem gehören hierher mehrere früheste Zonen von Krueger, die an den gleichen Mängeln leiden wie die meinigen. Aber auch wo nicht solche specielle Umstände die Vergleichung der Grössen unzuverlässig machen, ist letztere von sehr zweifelhaftem Werthe. Ich halte die Grössen in den südlichsten Zonen der älteren Arbeit, wie schon bemerkt, nicht für gleichartig mit denen, die durch spätere Beobachtungen bestimmt sind; die Sterne sind im allgemeinen heller angegeben, und nur in 14h bis 19h schwächer. Aus diesen Gründen wage ich aus den beiläufig 2000 Vergleichungen, die ich in dieser Art über die Sterngrössen der Zonen am Schröder'schen Fernrohr angestellt habe, kaum ein Resultat zu ziehen; es würde übrigens dahin lauten, dass die ältere Grösse 9m0 fast der jetzigen 9m1 (9m07 ohne Abrundung der letzten Stelle) entspricht, während bei den helleren Sternen von etwa 8m an der Unterschied sehr klein ist und mehr im entgegengesetzten Sinne liegt. Aber dies Resultat gilt eben nur für die Beziehungen zu den südlichsten Sternen

der älteren Arbeit, und wird durch die weit sichereren Resultate von Argelander (Band 3, S. XX) mit durchschnittlich viel nördlicheren Sternen, wenn man diese mit den folgenden Vergleichungen mit Bessel und Lalande zusammenhält, nicht bestätigt.

Den nächstliegenden Ersatz für die directe Vergleichung der älteren Arbeit mit der neueren hätte die Beziehung der letzteren auf Argelander's Grössenschätzungen in dem zweiten und dritten Cataloge des sechsten Bandes (S. 327 ff.) gewähren können, insofern diese mit denen der nördlichen Durchmusterung übereinstimmen. Argelander's eigene Bemerkungen in der Einleitung zu Band 6 zeigen aber, und einige neuerdings gemachte Vergleichungen bestätigen es, dass dies nur mit Einschränkungen der Fall ist. Die Grössenschätzungen zerfallen gewissermaassen in zwei Klassen, die eine schliesst sich dem System der Durchmusterung an, die andere dem der südlichen Zonen. Die letzteren bilden den Hauptbestandtheil im dritten Cataloge, indem sie der Beobachtungsreihe angehören, die Argelander zur Ergänzung seiner südlichen Zonen unternommen hat*). In den nächsten Jahren sind dann nur ganz vereinzelt südliche Sterne beobachtet, und erst seit 1862 geschah dies wieder häufiger; allein nun hatte Argelander seine Grössenscala (Band 3, a. a. O.) wieder etwas geändert. Deshalb konnte ich mir von einer Vergleichung der Grössen des dritten Catalogs mit den meinigen, neben der Vergleichung der Grössen in Argelander's südlichen Zonen, keine Vortheile versprechen; der zweite aber enthält nach Abzug der nur von Schmidt oder Tiele, oder ohne Grössenangabe beobachteten Sterne, der Nebelflecke, der Veränderlichen und der Nachträge aus dem Jahre 1867 (Band 6, S. 374) im ganzen nur 428 Sterne meist hellerer Grössenklassen, und von diesen gehören kaum hundert der Zeit 1854—1861 an.

Unter diesen Umständen habe ich meine Grössen nur mit denen von Bessel, Lalande und Argelander in den südlichen Zonen, und die der helleren Sterne mit denen der Uranometria Argentina, und endlich auch unter sich verglichen. Für Bessel, Lalande und Gould ist das Verhalten zur alten Durchmusterung bekannt, der Anschluss der neuen Arbeit an diese also indirect herstellbar. Um ihn zu sichern, ist eine grössere Anzahl von Sternen zur Vergleichung gezogen worden, als wohl sonst nöthig gewesen wäre, und um dabei keiner schädlichen Voreingenommenheit Einfluss auf die Bestimmung der Mittelzahlen zu gestatten, wurden jeweils entweder sämmtliche Zonen, die zu einem bestimmten Zwecke dienen konnten, für diesen verwerthet, oder aus ihnen eine Anzahl durch das Loos ausgewählt.

Bei der Vergleichung mit den fremden Beobachtungen sind die definitiven Grössen des Sternverzeichnisses, nicht die Angaben in den einzelnen Zonen angewandt worden, und zwar zunächst ohne im einzelnen auf die Zahl der Schätzungen Rücksicht zu nehmen. Um nur mit ganzen Zehnteln der Grössen zu operiren, sind alle Sterne von der Vergleichung ausgeschlossen, für welche die fremden Beobachtungen kein solches ergaben (also z. B. -4° 303, der in Bessel's Zonen zweimal, als 8.9^{m} und als 8^{m} vorkommt). In den folgenden Täfelchen gelten ferner die Vorzeichen für die absoluten Zahlen, es bedeutet also — heller, + schwächer. Die erste Zahl der dritten Columne in der nächsten Tabelle sagt also z. B., dass im Mittel aus 83 Sternen in 0^{h} und 1^{h} Bessel's Grösse $9^{m}.0$ der meinigen $8^{m}.72$ entspricht. Die letzteren sind mit SD bezeichnet.

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*) Diese erstreckt sich tief in das Jahr 1854 hinein, in die Zeit, da Argelander seine Schätzungen am Nordhimmel schon denen seiner Mitarbeiter accomodirte (Band 6, S. XVI), und man könnte deshalb meinen, dass die damaligen Grössenschätzungen einer Uebergangszeit angehörten, die einer festen Schätzungsmethode überhaupt ungünstig gewesen sei. Ich habe aber Grund zu der Annahme, dass das letztere nicht der Fall war, sondern dass die Grössenschätzungen der südlichen Sterne aus jener Zeit so gut wie die der südlichen Zonen sind und demselben Grössensystem angehören.

1. Vergleichung von SD mit Bessel's Zonen.

Die Sterne sind von zwei zu zwei Stunden zusammengefasst; die den einzelnen Differenzen beigefügte Zahl ist die Anzahl der verglichenen Sterne, die letzte Columne gibt die Anzahl der verglichenen Zonen, d. i. Specialcataloge von je einer Stunde in Rectascension und einem Grad in Declination. Das obere Argument ist Bessel's Grösse, nicht die meinige, weil von jedem Bessel'schen Sterne die von mir festgestellte Grösse bekannt ist, aber nicht umgekehrt; die Vergleichung der Grösse $9^1/_2$ wäre bei der Wahl eines andern Argumentes ganz illusorisch ausgefallen.

Tafel 1.

Bessel	$9^1/_2$	9	$8^1/_2$	8	$7^1/_2$	7	$6^1/_2$	6	Zonen
SD 0^h und 1^h	−0.50 1	−0.28 83	−0.31 18	−0.22 37	−0.33 6	−0.25 17	−0.70 1	−0.35 4	6
2 » 3	−0.51 9	−0.26 120	−0.18 20	−0.12 31	−0.12 11	−0.39 12	−0.32 4	0.00 2	6
4 » 5	−0.41 7	−0.16 176	−0.06 36	+0.01 72	−0.16 7	+0.05 25	−0.05 2	−0.44 7	7
6 » 7	−0.18 5	−0.03 142	+0.17 30	+0.31 68	+0.41 8	+0.09 21	−0.05 2	+0.22 6	4
8 » 9	−0.56 5	−0.20 110	−0.13 25	−0.02 57	−0.09 8	+0.02 30	−0.33 3	—	6
10 » 11	−0.55 2	−0.24 87	−0.25 9	−0.09 23	−0.14 5	−0.09 11	+0.20 1	+0.50 3	4
12 » 13	−0.48 5	−0.25 105	−0.08 11	−0.26 33	−0.51 8	−0.45 4	—	−0.75 2	5
14 » 15	−0.25 2	−0.17 122	−0.18 28	−0.07 53	+0.11 7	+0.02 9	−0.65 2	+0.13 3	6
16 » 17	—	−0.34 60	−0.28 14	−0.16 33	−0.38 4	+0.04 14	−0.60 2	+0.20 1	5
18 » 19	−0.15 2	−0.17 123	−0.22 22	−0.05 60	−0.05 13	+0.09 21	0.00 2	−0.14 7	6
20 » 21	−0.45 2	−0.13 111	−0.07 9	−0.08 25	−0.12 6	−0.09 15	+0.20 1	−0.50 1	4
22 » 23	−0.43 7	−0.25 123	−0.37 23	−0.08 38	−0.08 4	−0.58 14	−1.20 1	−0.29 7	7
Mittel der 12 Mittelzahlen	−0.41	−0.21	−0.16	−0.07	−0.12	−0.14	−0.32	−0.15	-
Mittel der einzelnen Sterne	−0.42	−0.19	−0.15	−0.04	−0.10	−0.06	−0.31	−0.14	66
Zahl der Sterne	47	1362	245	530	87	193	21	43	

Hier fällt sogleich auf, dass ausser der aus nur 2 Sternen gebildeten Mittelzahl für die Sterne 6.7^m alle anderen in 6^h und 7^h ein positives Maximum zeigen. Angedeutet, wenn auch erheblich weniger markirt, ist ein zweites Maximum in 18^h und 19^h, und im ganzen wird durch genauere Betrachtung mittelst Curvenzeichnungen bei den meisten Grössenabtheilungen bestätigt, dass die Differenz SD—Bessel um so mehr positiv ist, je sternreicher die verglichenen Räume sind. Diese Abweichung fiel mir schon im ersten Jahre der Arbeit auf, so oft ich aus den ärmeren Partien wieder in die Milchstrasse in Monoceros u. s. w. kam, und in allen Jahren hat sich dieser Eindruck stets von neuem wiederholt. Ich muss demnach die Unterschiede der obigen Mittelzahlen für gleiche Grössenklassen für reell halten; zum wenigsten, was die Stunden 6^h und 7^h anlangt, scheint mir dies ganz entschieden. Die Hauptmittel der SD—Bessel sind alsdann so zu bilden, wie sie in der drittletzten Zeile der obigen Tafel stehen, nämlich indem jede Doppelstunde, ohne Rücksicht auf die Zahl der in ihr enthaltenen gemeinsamen Sterne, gleiches Gewicht erhält; doch weichen auch die einfachen Mittel aus allen einzelnen Sternen, die in der vorletzten Zeile gegeben sind, nur etwa bei den Sternen 7^m etwas mehr als ganz unbedeutend ab.

Sieht man die Unterschiede der einzelnen Doppelstunden von einander als reell an, so müsste man, um die Sicherheit der Schätzungen zu untersuchen, eigentlich die obigen Zahlen unter sich, etwa durch Curvenzeichnung, ausgleichen und jede Vertical-Columne als Function der Sterndichtigkeit, oder der Rectascension darstellen. Bis jetzt sind aber nur die wahrscheinlichen Fehler der Zahlen des obigen Täfelchens durch Vergleichung einer jeden mit den einzelnen SD—Bessel, aus denen sie entstanden ist, und zwar aus den Summen der Quadrate der Abweichungen, gebildet worden, und auch nur für die fünf Grössenabtheilungen 9 bis 7, da für die

helleren und schwächeren die Zahl der Sterne zu klein ist. Die wahrscheinlichen Fehler eines einzelnen SD—Bessel*) werden so:

Tafel 2.

Bessel	9	$8^1/_2$	8	$7^1/_2$	7
SD 0^h und 1^h	±0.18	±0.18	±0.29	±0.34	±0.28
2 » 3	0.22	0.27	0.27	0.23	0.38
4 » 5	0.20	0.12	0.27	0.20	0.40
6 » 7	0.16	0.16	0.24	0.27	0.48
8 » 9	0.19	0.24	0.24	0.29	0.38
10 » 11	0.21	0.22	0.29	0.26	0.32
12 » 13	0.21	0.16	0.25	0.28	0.16
14 » 15	0.21	0.23	0.26	0.16	0.33
16 » 17	0.24	0.30	0.26	0.56	0.28
18 » 19	0.19	0.23	0.24	0.25	0.38
20 » 21	0.19	0.20	0.32	0.44	0.37
22 » 23	0.23	0.27	0.34	0.45	0.46
Durchschnitt	0.20	0.22	0.27	0.31	0.35
w. F. jedes einzelnen zweistündigen Mittels	±0.02	±0.05	±0.04	±0.12	±0.09
aus durchschnittlich	113	20	44	7	16 Sternen in jeder Doppelstunde.

Alle diese wahrscheinlichen Fehler sind einestheils etwas zu klein, weil die Zahlen der Tafel 1, wie bemerkt, noch einer weiteren Ausgleichung bedürfen, während sie hier, jede für sich, als die wahrscheinlichsten betrachtet sind; anderntheils aber zu gross, weil diese Zahlen durch volle zwei Stunden als constant angenommen wurden. Dass sie aber nicht wesentlich unterschätzt worden sind, geht aus dem Resultat einer zweiten Rechnung hervor, in welcher auf constante Unterschiede in den verschiedenen Stunden der Rectascension gar keine Rücksicht genommen ist. Diese zweite Rechnung gibt also die in der vorletzten Zeile von Tafel 1 angeführten, hier in anderer Form wiederholten Mittelwerthe, und dazu die folgenden wahrscheinlichen Fehler eines einzelnen SD—Bessel:

Tafel 3.

$9^1/_2$ Bessel	$= 9^m.08$ SD	w. F.	$= 0^m.15$
9	8.81		$0.21 = \sqrt{(0.20^2 + 0.06^2)}$
$8^1/_2$	8.35		$0.23 \quad \sqrt{(0.22^2 + 0.08^2)}$
8	7.96		$0.28 \quad \sqrt{(0.27^2 + 0.08^2)}$
$7^1/_2$	7.40		$0.32 \quad \sqrt{(0.31^2 + 0.07^2)}$
7	6.94		$0.41 \quad \sqrt{(0.35^2 + 0.21^2)}$
$6^1/_2$	6.19		0.39
6	5.86		0.43

Diese wahrscheinlichen Fehler sind nur so wenig grösser als der Durchschnitt der in Tafel 2 gefundenen, dass man zweifeln könnte, ob überhaupt reelle Unterschiede, die von der Rectascension abhängen, vorhanden sind. Dies würde aber wenigstens für 6^h und 7^h selbst dem unmittelbaren Eindrucke widersprechen; und deshalb ist es mir plausibeler, dass in Wirklichkeit die SD—Bessel sich aus zwei Theilen zusammensetzen: aus dem in Tafel 2 gegebenen, welcher aus der Vergleichung in kleineren Räumen (je 680 Quadratgraden) geschlossen ist, und einem zweiten, der die Veränderung des ersten durch Verhältnisse ausdrückt, welche sich erst in grösseren Räumen merklich umgestalten. Dieser zweite ist in den Zahlen der Tafel 3 mit

*) Diese und alle gleichartigen wahrscheinlichen Fehler sind auf drei Decimalen berechnet worden, hier aber auf zwei abgerundet; wo nöthig, z. B. in den letzten Columnen der Tafeln 3, 6 ... sind die dritten Decimalen in der Rechnung berücksichtigt.

dem ersten vereinigt; die Vergleichung mit dem Durchschnitt in Tafel 2 gibt seinen wahrscheinlichen Werth für die Sterne 9^m bis einschliesslich 7^m5 (Bessel) 0^m07, für die Sterne 7^m aber (ob zufällig?) viel grösser, nämlich 0^m21, im Durchschnitt 0^m11 bis 0^m12.

Die Vergleichung meiner Grössen mit den Bessel'schen zeigt nur eine Abweichung vom regelmässigen Verlauf, nämlich bei den Grössen $6^1/_2$ und 6, wo aber die Resultate nur auf 21, bez. 43 Sternen beruhen. Verbindet man beide, so erhält man aus 64 Sternen 6^m17 Bessel $= 5^m97$ SD. Ich habe also alle Grössen etwas heller als Bessel geschätzt, doch bleibt bei den Sternen 7^m bis 8^m der Unterschied innerhalb 0^m1; bei den helleren wird er etwas grösser, fällt aber hier, wie bekannt, Bessel zur Last, bei den schwächeren sind meine Grössenklassen etwas enger als die von Bessel. Dass aber dieser Unterschied bei $9^1/_2$ bereits 0^m42 beträgt, liegt sicher daran, dass Bessel in seinen Zonen von den Sternen 9.10^m nur die allerhellsten beobachtet hat, deren Durchschnittsgrösse selbst nach Bessel's Scala kaum von 9^m3 verschieden, sicher nicht unter 9^m35 ist.

Der Uebergang von den wahrscheinlichen Fehlern der Abweichungen SD—Bessel zu denen meiner Grössen für sich bleibt unsicher. Nimmt man nach Band 3, S. XXIII die wahrscheinlichen Fehler der Bessel'schen Grössen für die Sterne 9^m, 8.9^m und 8^m zu 0^m20 an, für die helleren zu 0^m30, so folgt aus den Werthen in Tafel 3 für meine Grössenangaben im Sternverzeichniss 0^m13, bez. 0^m25, und da jene durchschnittlich auf 2.3, diese auf 2.6 einzelnen Schätzungen beruhen, für diese letzteren 0^m20, bez. 0^m40. Alle diese Zahlen sind grösser als sie Argelander für die nördliche Durchmusterung abgeleitet hat.

2. Vergleichung von SD mit Argelander's südlichen Zonen.

In ganz ähnlicher Form wie bei der Vergleichung mit Bessel gibt Tafel 4 die gefundenen Mittelzahlen.

Tafel 4.

Argelander	$9^1/_2$	9	$8^1/_2$	8	$7^1/_2$	7	$6^1/_2$	6	Zonen
SD 0^h und 1^h	−0.33 14	−0.08 3^6	−0.04 35	+0.11 28	+0.44 8	+0.48 13	—	−0.50 2	4
2 » 3	−0.39 30	−0.13 5^1	0.00 28	−0.16 14	−0.27 11	−0.20 6	−0.20 1	—	4
4 » 5	−0.27 21	0.00 4^3	+0.27 33	+0.38 18	+0.27 6	−0.04 9	−0.15 2	+0.07 3	3
6 » 7	−0.15 17	+0.11 17^3	+0.27 104	+0.44 40	+0.50 23	+0.58 36	—	+0.25 6	5
8 » 9	−0.31 12	+0.05 13^1	+0.10 59	+0.22 57	+0.48 16	+0.12 17	+0.36 5	−0.10 2	5
10 » 11	−0.29 20	+0.05 9^2	+0.21 41	+0.29 31	+0.26 13	+0.46 16	−0.50 2	−0.02 5	5
12 » 13	−0.18 12	+0.08 7^2	+0.30 29	+0.51 17	+0.47 10	+0.64 8	+0.57 3	+0.70 2	4
14 » 15	−0.28 18	−0.01 49	+0.26 22	+0.34 7	+0.42 10	+0.40 4	+0.38 4	—	4
16 » 17	−0.53 24	−0.08 88	+0.14 29	+0.01 14	+0.20 5	+0.15 14	+0.50 1	−0.15 2	5
18 » 19	−0.40 28	−0.09 86	+0.07 44	+0.03 12	0.00 12	+0.38 15	+0.42 5	−0.30 2	3
20 » 21	−0.42 39	−0.17 68	−0.01 38	−0.11 29	−0.04 11	+0.17 15	−0.15 2	+0.40 3	5
22 » 23	−0.43 26	−0.18 45	−0.08 30	−0.10 18	+0.23 9	−0.04 8	+0.50 1	+0.30 2	4
Mittel der 12 Mittelzahlen	−0.33	−0.04	+0.12	+0.16	+0.25	+0.26	+0.17	+0.06	
Mittel der einzelnen Sterne	−0.36	−0.01	+0.10	+0.11	+0.27	+0.32	+0.24	+0.09	51
Zahl der Sterne	261	934	492	285	134	161	26	29	

Der Unterschied der für 6^h und 7^h abgeleiteten Zahlen von den übrigen ist auch hier sichtbar, am meisten für die Sterne $9^1/_2$ und 9; die Vergleichung der übrigen unter sich zeigt aber nur wenig Einfluss der Sterndichtigkeit, so dass hier die bei der Ableitung der SD—Bessel gefundenen Verhältnisse nur als schwach angedeutet gelten können. Ich bin deshalb geneigt hier die Mittel der einzelnen Sterne (vorletzte Zeile der vorigen Tafel) mehr für das anzunehmende

Ergebniss der Vergleichung zu halten, als bei den SD—Bessel. Die Rechnung ist indessen ebenso weitergeführt worden, wie bei den letzteren; es enthält also Tafel 5 die zu den zweistündigen Mittelzahlen gehörigen wahrscheinlichen Fehler (für die Sterne $6^1/_2$ und 6 sind sie nicht ableitbar), Tafel 6 die Resultate der Vergleichung aller Sterne einer jeden Grössenabtheilung mit ihren Hauptmitteln.

Tafel 5.

Argelander	$9^1/_2$	9	$8^1/_2$	8	$7^1/_2$	7
SD 0^h und 1^h	±0.08	±0.15	±0.24	±0.23	±0.26	±0.31
2 » 3	0.08	0.17	0.20	0.38	0.26	0.50
4 » 5	0.12	0.17	0.20	0.26	0.33	0.36
6 » 7	0.20	0.15	0.14	0.24	0.30	0.33
8 » 9	0.08	0.15	0.21	0.28	0.32	0.27
10 » 11	0.11	0.15	0.16	0.26	0.33	0.35
12 » 13	0.23	0.18	0.22	0.23	0.35	0.36
14 » 15	0.12	0.17	0.20	0.29	0.27	0.37
16 » 17	0.13	0.20	0.17	0.22	0.44	0.44
18 » 19	0.18	0.21	0.29	0.38	0.42	0.43
20 » 21	0.14	0.17	0.27	0.29	0.44	0.37
22 » 23	0.15	0.20	0.26	0.20	0.36	0.23
Durchschnitt	0.14	0.17	0.21	0.27	0.34	0.36
w. F. jedes einzelnen zweistündigen Mittels	±0.03	±0.02	±0.03	±0.06	±0.10	±0.10
aus durchschnittlich	22	78	41	24	11	13 Sternen in jeder Doppelstunde.

Tafel 6.

$9^1/_2$ Argelander	$= 9^m.14$ SD	w. F.	$= 0^m.15 = \sqrt{(0.14^2 + 0.07^2)}$
9	8.99		0.19 $\sqrt{(0.17^2 + 0.07^2)}$
$8^1/_2$	8.60		0.23 $\sqrt{(0.21^2 + 0.07^2)}$
8	8.19		0.30 $\sqrt{(0.27^2 + 0.12^2)}$
$7^1/_2$	7.77		0.36 $\sqrt{(0.34^2 + 0.13^2)}$
7	7.32		0.39 $\sqrt{(0.36^2 + 0.15^2)}$
$6^1/_2$	6.74		0.37
6	6.09		0.39

Der zweite Theil der wahrscheinlichen Fehler wächst hier mit zunehmender Helligkeit der Sterne von $0^m.07$ bis $0^m.15$, sein Durchschnittswerth ist $0^m.10$, sehr nahe eben so gross, wie bei den SD—Bessel.

Die SD—Argelander zeigen im allgemeinen Werthe, die den SD—Bessel entgegengesetzt sind; nur die Grösse $9^1/_2$ macht eine Ausnahme, die anzeigt, dass auch bei Argelander meist nur die hellsten Sterne dieser Grösse vorkommen. Bei 9^m sind die Grössenangaben identisch; bei helleren Sternen schätze ich schwächer, und zwar steigt bei 7^m die Differenz auf $0^m.3$, dann nähern sich die Schätzungen wieder, wahrscheinlich aber nicht so rasch, wie aus der letzten Zeile von Tafel 6 folgt. Zieht man die 26 Sterne 6.7^m mit den 29 6^m zusammen, so folgt $6^m.24$ Argelander $= 6^m.40$ SD.

In Band 2, Einleitung Nr. 8, hat Argelander den wahrscheinlichen Fehler einer seiner Grössenschätzungen aus der Vergleichung derselben unter sich $0^m.297$, aus der mit Bessel auf indirectem Wege $0^m.282$ gefunden, ich nehme denselben also zu $0^m.29$ an. Die südlichen Zonen enthalten in 23250 Beobachtungen 17600 verschiedene Sterne, der Beitrag, den die zufälligen Fehler von Argelander's Grössenschätzungen zu jedem der Fehler in Tafel 6 liefern, ist demnach $0^m.252$. Ferner zeigen die weiteren Untersuchungen Argelander's a. a. O., dass die Fehler seiner Schätzungen mit der Helligkeit der Sterne zunehmen. Will man also die letzte Zahl benutzen, um den Antheil meiner Schätzungen auszuscheiden, so kann mit der Durchschnittszahl von Argelander nur das

Mittel der Fehler in Tafel 6, ohne Rücksicht darauf, dass die kleineren sehr viel sicherer bestimmt sind, combinirt werden. Dies Mittel ist $0^{m}.297$, der wahrscheinliche Fehler von SD also $0^{m}.16$, oder der der einzelnen Schätzung $\pm 0^{m}.25$. Welche Sicherheit aber diese Zahl hat, ist schwer zu schätzen; auch dürfen, wenn eine Grössenscala der südlichen Zonen festgestellt werden soll, streng genommen Argelander's Bemerkungen a. a. O. über die in derselben vorgekommenen Schwankungen nicht ausser Acht gelassen werden.

3. Vergleichung von SD mit Lalande.

Diese Vergleichung erschien in so fern werthvoller als die mit Bessel und mit Argelander, als Lalande das ganze Areal meiner Zonen umfasst. Sie wurde deshalb auf alle hierher gehörigen Lalande'schen Sterne ausgedehnt, jedoch wiederum mit Ausschluss der wenigen, welche mehrmals bei Lalande vorkommen ohne im Mittel der Grössen ein volles Zehntel zu ergeben. Bei der grossen Anzahl von Sternen sind hier nicht zwei-, sondern einstündige Mittel gebildet; sonst sind die folgenden Tafeln den früheren gleichartig.

Tafel 7.

Lalande	$9^{1}/_{2}$		9		$8^{1}/_{2}$		8		$7^{1}/_{2}$		7		$6^{1}/_{2}$		6	
SD 0^{h}	−1.01	12	−0.53	54	−0.41	38	−0.38	74	−0.28	20	+0.13	23	+0.15	17	+0.18	15
1	−0.80	9	−0.63	41	−0.40	51	−0.31	65	−0.09	27	+0.10	25	+0.21	14	+0.35	12
2	−1.05	2	−0.65	41	−0.45	47	−0.13	63	−0.02	22	−0.04	35	+0.31	12	+0.22	18
3	−0.65	2	−0.52	62	−0.24	63	−0.06	90	−0.04	47	+0.01	38	+0.25	20	+0.12	17
4	—		−0.47	56	−0.17	88	−0.07	124	+0.08	54	+0.01	34	+0.18	24	+0.37	13
5	−0.90	1	−0.46	76	−0.24	81	−0.08	124	+0.04	52	−0.12	52	+0.12	24	+0.17	18
6	−0.58	6	−0.44	105	−0.21	86	−0.02	156	+0.01	70	+0.12	46	+0.29	28	+0.10	31
7	−0.79	14	−0.49	144	−0.24	103	−0.07	158	−0.12	55	+0.09	48	+0.23	24	+0.11	30
8	−0.80	10	−0.57	117	−0.22	74	−0.10	110	−0.05	60	−0.03	49	+0.18	32	+0.21	23
9	−0.69	15	−0.48	89	−0.15	68	−0.39	114	+0.09	69	+0.27	45	+0.35	29	+0.19	29
10	−0.73	3	−0.48	62	−0.28	68	+0.04	107	+0.20	55	+0.33	43	+0.35	31	+0.52	30
11	−0.81	11	−0.45	63	−0.15	40	−0.07	81	+0.14	35	+0.28	30	+0.38	18	+0.46	20
12	−0.74	14	−0.41	87	−0.27	57	−0.11	102	−0.14	46	+0.01	27	+0.21	11	+0.37	18
13	−0.73	16	−0.45	84	−0.18	60	−0.08	97	−0.11	39	+0.03	18	+0.14	15	+0.06	16
14	−0.71	12	−0.42	60	−0.23	57	−0.11	93	−0.03	39	+0.11	31	+0.04	10	+0.35	14
15	−0.45	2	−0.53	62	−0.28	71	+0.01	75	+0.10	48	+0.26	40	+0.22	17	+0.39	26
16	−0.67	3	−0.54	36	−0.27	54	−0.16	85	−0.02	49	+0.19	38	+0.28	19	+0.17	20
17	−0.94	10	−0.65	65	−0.35	54	−0.25	93	−0.21	43	−0.06	21	−0.01	18	+0.11	18
18	−0.68	6	−0.37	85	−0.21	67	−0.08	152	−0.12	48	+0.01	34	+0.18	26	+0.18	24
19	−0.82	6	−0.54	100	−0.37	87	−0.22	105	−0.20	40	−0.20	29	+0.01	10	+0.11	17
20	−0.59	15	−0.42	101	−0.19	83	−0.12	107	−0.19	50	+0.02	30	−0.06	5	+0.16	20
21	−0.70	8	−0.40	84	−0.11	90	−0.14	102	−0.02	28	+0.08	32	+0.35	15	+0.02	16
22	−0.92	12	−0.39	84	−0.21	52	−0.08	70	−0.10	29	+0.02	27	+0.03	11	+0.24	14
23	−0.74	17	−0.31	75	−0.15	49	−0.18	105	−0.13	30	−0.03	24	−0.09	12	−0.16	14
Mittel der 24 Mittelzahlen	−0.73		−0.48		−0.25		−0.13		−0.05		+0.06		+0.18		+0.21	
Mittel der einzelnen Sterne	−0.77		−0.47		−0.24		−0.12		−0.04		+0.07		+0.21		+0.22	
Zahl der Sterne	206		1833		1590		2452		1055		819		442		473	

Ein Unterschied der Grössenschätzungen in den sternreichsten Gegenden gegen die übrigen tritt hier nicht hervor; ist ein solcher vorhanden, so muss er sehr klein sein. Indessen sind doch auch hier die Unterschiede der einzelnen Stunden unter einander etwas grösser, als nach der Uebereinstimmung der einzelnen Sterne innerhalb jeder Stunde zu erwarten wäre. Um die wahrscheinlichen Fehler wie früher zu ermitteln sind aber nicht alle Stunden benutzt, sondern nur die in Tafel 8 angegebenen, und aus eben denselben sind die in Tafel 9 zusammengestellten wahrscheinlichen Fehler gebildet, mit Ausnahme der Grössenabtheilung $9^{1}/_{2}$, welche in

Tafel 8 wegen der geringen Zahl der Vergleichungspunkte nicht berücksichtigt werden konnte. Zur Beurtheilung der Genauigkeit ist die Zahl der Vergleichungspunkte trotz dieser Beschränkung auf einen Theil des Areals jedenfalls noch genügend; die Zusammenstellung der Grössen in Tafel 9 ist aber die Wiederholung der auf allen Sternen beruhenden Angaben in Tafel 7.

Tafel 8.

Lalande	9	$8^1/_2$	8	$7^1/_2$	7	$6^1/_2$	6
SD 0^h	±0.20	±0.17	±0.34	±0.26	±0.29	±0.35	±0.28
1	0.29	0.21	0.31	0.24	0.32	0.25	0.29
2	0.20	0.21	0.28	0.20	0.18	0.24	0.26
3	0.18	0.21	0.23	0.24	0.28	0.26	0.23
4	0.23	0.20	0.27	0.28	0.37	0.38	0.40
7	0.19	0.21	0.27	0.24	0.33	0.33	0.30
10	0.21	0.23	0.28	0.26	0.26	0.23	0.32
13	0.20	0.26	0.27	0.29	0.20	0.27	0.40
16	0.20	0.21	0.30	0.29	0.27	0.23	0.37
19	0.21	0.24	0.31	0.26	0.35	0.26	0.53
22	0.21	0.24	0.28	0.30	0.29	0.20	0.32
Durchschnitt	0.19	0.22	0.28	0.26	0.29	0.27	0.34
w. F. jedes einzelnen Stundenmittels	±0.02	±0.03	±0.03	±0.04	±0.05	±0.07	±0.07
aus durchschnittlich	78	62	102	44	34	14	20 Sternen in jeder Stunde.

Tafel 9.

	m		m	
$9^1/_2$ Lalande =	8.73	SD w. F. =	0.24	
9	8.53		0.21	$= \sqrt{(0.19^2 + 0.08^2)}$
$8^1/_2$	8.26		0.22	$\sqrt{(0.22^2 + 0.05^2)}$
8	7.88		0.29	$\sqrt{(0.28^2 + 0.06^2)}$
$7^1/_2$	7.46		0.27	$\sqrt{(0.26^2 + 0.07^2)}$
7	7.07		0.29	$\sqrt{(0.29^2 + 0.05^2)}$
$6^1/_2$	6.71		0.28	$\sqrt{(0.27^2 + 0.08^2)}$
6	6.22		0.34	$\sqrt{(0.34^2 + 0.06^2)}$

Auch hier zeigt also die genauere Untersuchung, dass auf die Grössenschätzungen kleine Fehlerquellen Einfluss haben, die erst bei der Vergleichung grösserer Räume mit einander hervortreten; doch scheinen dieselben hier etwas weniger einflussreich zu sein, als bei den früheren Vergleichungen, vielleicht weil nur je eine Stunde, allerdings bei grösserer Ausdehnung in Declination, verglichen ist.

Die hier gefundenen SD—Lalande bestätigen im allgemeinen, was schon früher bekannt war, nämlich dass Lalande's hellste Grössen gegen unsere jetzige Grössenscala etwas zu hell geschätzt sind, die schwächsten zu schwach, und dass namentlich Lalande's Sterne 9.10^m (und 10^m) schon eine halbe Grösse und mehr von unseren jetzigen Schätzungen abweichen.

Die Vergleichung der Band 3, S. XXIII gegebenen wahrscheinlichen Fehler der Lalande'schen Schätzungen ergibt, wenn dieselben ebenso behandelt werden, wie die Bessel'schen, und die Durchschnittszahl der Lalande'schen Beobachtungen für jeden Stern = 1.03 angenommen wird, für meine Grössen im Sternverzeichniss den wahrscheinlichen Fehler nur $0^m.08$, und den der einzelnen Schätzung $0^m.14$.

4. Vergleichung von SD mit Gould's Uranometria Argentina.

Die bisherigen Vergleichungen beziehen sich hauptsächlich auf die schwächeren Sterne, nur mit Lalande sind für die Sterne 6^m und 6.7^m Vergleichungspunkte in genügender Zahl vor-

handen, und auch hier ist es nicht möglich, über die Grösse 6 hinauszugehen. Die Arbeit von Gould gestattet eine Grösse weiter zu gehen; die noch helleren Sterne sind bei mir jedenfalls nur unsicher, oder vielmehr nicht unabhängig bestimmt, da mir von vielen bekannt war, welche Grösse ihnen die Uranometria nova oder Heis' Atlas coelestis beilegen.

Für die Ermittelung der Beziehungen zwischen Gould und SD wurde das Areal der letzteren durch den Parallel von -12° in zwei Theile getheilt, deren südlicher wegen der vorausgesetzten (aber nicht bestätigten) grösseren Unsicherheit der einzelnen Schätzungen etwas grösser genommen wurde als der nördliche. Die einzelnen Grössen wurden schon im Jahre 1882 zusammengestellt, als noch eine beträchtliche Zahl von Revisionen rückständig war. Es sind also nicht überall die definitiven Grössen des Sternverzeichnisses mit Gould verglichen, doch kann daraus kein merklicher Fehler der Endresultate entstanden sein, indem nach mancherlei Prüfungen die Revisionsbeobachtungen einen merklichen Unterschied gegen die Zonenbeobachtungen nicht zeigen. Die ganze weitere Untersuchung ist erst neuerdings ausgeführt worden.

Die Uranometria Argentina gibt die Grössen in Ganzen und Zehntheilen an. Für die folgenden Tafeln 10 u. s. w. sind stets drei solche Abtheilungen zusammengezogen worden, z. B. $5^{m}.0$, $5^{m}.1$, $5^{m}.2$ in die Bezeichnung $5^{m}.1$. Ausgeschlossen wurden dabei die von Gould als veränderlich oder der Veränderlichkeit sehr verdächtig angegebenen Sterne, und einige andere, die mir theils nicht richtig identificirt, theils wegen Duplicität zur Vergleichung nicht wohl geeignet schienen. Der Catalog soll bis einschliesslich $7^{m}.0$ vollständig sein; er enthält aber sowohl im Text als auch in den Anmerkungen noch schwächere Grössen, die ich ebenfalls mit den meinigen verglichen habe, obwohl sie bei Gould nicht den gleichen Grad von Genauigkeit besitzen. Die Zahl dieser letzteren beträgt 189, die der helleren 1871, die wahrscheinlichen Fehler sind nur für die helleren berechnet.

Das Argument der Vergleichungen ist, wie früher, die Grösse des fremden Catalogs. Doch findet hier der Unterschied statt, dass streng genommen alle bei Gould nicht vorkommenden Sterne für schwächer als $7^{m}.0$ zu halten sind. Dennoch kommen bei mir viele Sterne vor, die $7^{m}.0$ oder heller genannt sind, ohne dass sie in der Uranometria Argentina verzeichnet oder erwähnt wären*). Bei weitem der grösste Theil derselben würde wohl bei Gould die Grösse $7^{m}.1$, höchstens $7^{m}.3$ bekommen haben, falls diese Grössen in seinen Plan eingeschlossen gewesen wären; man muss also erwarten, dass die Abtheilung >7 in der folgenden Tafel einen sehr viel mehr positiven Mittelwerth für SD—Gould zeigt als die anderen Abtheilungen, da aus ihr die durchaus negativen Abweichungen, die von den hier besprochenen Sternen herrühren, weggeblieben sind.

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*) Sie sind der Grösse nach so vertheilt:

m	Nordhälfte	5,	Südhälfte	7 Sterne
6.3				
6.4		0		1
6.5		11		14
6.6		0		2
6.7		12		15
6.8		41		70
6.9		6		6
7.0		199		223
Zusammen . . .		274		338
Mittlere Grösse		$6^{m}.92$		$6^{m}.90$

oder vereinigt 612 Sterne mit der mittleren Grösse $6^{m}.91$.

Tafel 10.

a. Nordhälfte (−2° bis −12° 0′).

Gould	5.1	5.4	5.7	6.0	6.3	6.6	6.9	>7
SD 0h und 1h	−0.02 2	+0.21 5	+0.07 6	+0.19 8	+0.13 13	+0.15 20	+0.22 34	+0.12 6
2 » 3	+0.20 2	+0.36 7	−0.06 7	+0.16 8	+0.14 7	−0.10 17	+0.06 21	0.00 1
4 » 5	−0.38 5	−0.63 3	−0.05 9	−0.03 9	+0.03 12	0.00 27	+0.09 27	+0.22 9
6 » 7	—	+0.05 4	−0.25 6	−0.28 13	−0.18 19	−0.03 27	+0.05 30	+0.26 14
8 » 9	−0.25 1	+0.37 3	−0.08 6	−0.02 4	−0.10 11	−0.17 22	−0.07 33	+0.29 23
10 » 11	−0.80 1	−0.27 3	+0.10 2	−0.04 7	+0.04 13	+0.01 14	−0.01 26	+0.10 6
12 » 13	+0.10 3	—	−0.19 4	−0.08 11	+0.03 6	0.00 20	−0.02 31	+0.20 8
14 » 15	—	−0.60 2	−0.05 3	−0.35 6	+0.02 3	−0.20 12	−0.16 28	+0.06 8
16 » 17	+0.03 3	−0.12 2	+0.10 8	+0.14 5	−0.27 6	0.00 17	−0.11 19	—
18 » 19	+0.10 2	−0.20 3	−0.22 9	−0.18 4	−0.20 7	−0.11 23	−0.11 25	+0.15 10
20 » 21	+0.25 2	−0.02 2	+0.06 5	0.00 3	+0.11 11	+0.19 18	+0.07 34	+0.15 10
22 » 23	+0.02 4	+0.05 4	+0.52 5	0.00 4	+0.13 19	+0.12 18	+0.16 26	+0.52 4
Mittel der 12 Mittelzahlen	−0.07	−0.08	−0.01	−0.04	−0.02	−0.02	+0.01	+0.19
Mittel der einzelnen Sterne	−0.06	+0.01	−0.02	−0.05	0.00	−0.01	+0.02	+0.21
Zahl der Sterne	25	38	70	82	127	235	334	99

b. Südhälfte (−12° 0′ bis −23°).

Gould	5.1	5.4	5.7	6.0	6.3	6.6	6.9	>7
SD 0h und 1h	+0.12 2	+0.25 5	+0.27 7	+0.16 5	−0.03 8	−0.14 17	+0.09 23	−0.30 2
2 » 3	—	−0.05 2	+0.25 4	−0.03 9	−0.12 8	−0.10 16	−0.05 27	−0.06 4
4 » 5	+0.20 3	−0.20 4	+0.30 10	+0.05 8	−0.01 11	−0.08 23	+0.05 26	+0.37 8
6 » 7	+0.38 4	+0.03 8	+0.04 11	+0.25 10	−0.15 12	−0.18 26	+0.02 48	+0.23 17
8 » 9	−0.31 4	+0.25 2	−0.38 5	+0.07 10	−0.28 9	−0.05 23	−0.07 31	+0.13 9
10 » 11	−0.20 1	+0.02 4	−0.02 4	−0.23 3	+0.03 8	0.00 22	+0.02 32	−0.02 4
12 » 13	—	−0.10 5	−0.06 7	−0.02 5	+0.11 11	+0.05 11	+0.05 31	+1.20 2
14 » 15	−0.35 2	−0.28 4	+0.12 5	−0.02 9	−0.27 8	−0.04 18	−0.07 16	+0.14 9
16 » 17	−0.10 1	−0.22 2	—	−0.12 9	−0.04 7	−0.25 15	−0.20 31	+0.08 12
18 » 19	+0.52 4	−0.03 6	−0.07 13	+0.16 14	−0.04 7	−0.03 20	−0.01 35	+0.41 7
20 » 21	+0.07 3	−0.03 6	−0.19 8	+0.06 8	+0.09 13	+0.02 15	+0.03 44	+0.41 11
22 » 23	−0.08 4	−0.20 4	−0.07 9	+0.03 8	+0.10 8	−0.15 17	−0.17 22	−0.20 5
Mittel der 12 Mittelzahlen	+0.02	−0.05	+0.02	+0.03	−0.05	−0.08	−0.03	+0.20
Mittel der einzelnen Sterne	+0.07	−0.04	+0.02	+0.05	−0.04	−0.08	−0.02	+0.20
Zahl der Sterne	28	52	83	98	110	223	366	90

Tafel 10 ist den Tafeln 1, 4, 7 ganz analog. Sie zeigt, abgesehen von der letzten Columne, nur vereinzelt grössere Abweichungen, und diese gleichen sich in den Mittelzahlen wieder aus, auch stimmen die Nordpartie und die Südpartie gut zusammen. Bildet man also aus allen Sternen die Hauptmittel, so erhält man

5.1	Gould : SD—Gould =	+0.01	aus 53 Sternen
5.4		−0.02	90
5.7		0.00	153
6.0		0.00	180
6.3		−0.02	237
6.6		−0.04	458
6.9		−0.01	700
>7		+0.21	189

Bis zu 6.0 kann die Uebereinstimmung als vollständig angesehen werden. Bei den schwächeren Sternen dürfte sie etwas weniger vollständig sein, als sie hier erscheint, denn die Berücksichtigung der bei Gould nicht vorkommenden Sterne des Sternverzeichnisses würde jedenfalls die positive Zahl bei der letzten Abtheilung in eine negative verwandeln, und es er-

scheinen deshalb die negativen Zeichen unter 6.0 nicht als zufällig. Auch die Abtheilung 6.9, vielleicht selbst 6.6 sind wohl noch negativer Correctionen bedürftig, der Betrag dieser letzteren ist aber nur hypothetisch zu ermitteln, da weder die mittlere Grösse der 612 Sterne in der Gould'schen Scala bekannt ist, noch auch Auslassungen bei Gould oder kleine Lichtschwankungen ausgeschlossen sind. Mir scheint aber die Annahme, dass richtiger zu 6.9 der Werth SD—Gould = —0.07 oder —0.08 gehört, nicht übertrieben.

Die wahrscheinlichen Fehler der SD—Gould sind aus 8 Doppelstunden bestimmt, von denen je vier der Nord- und der Südhälfte angehören. Dass sich für die letztere etwas kleinere Fehler ergeben, halte ich für Zufall, und habe deshalb den Durchschnitt aus beiden Theilen gezogen. Tafel 11 gibt die einzelnen Werthe dafür (die Grössen 5.1 und 5.4 sind dabei wegen der geringeren Anzahl von Sternen in eine Gruppe vereinigt), und Tafel 12 neben den Relationen zwischen Gould und SD die wahrscheinlichen Fehler einer einzelnen Differenz, analog den Werthen in Tafel 3, 6, 9 aus den einzelnen Sternen abgeleitet. Den zu 6.9 gehörigen Werth von SD—Gould habe ich dabei nach dem Obigen = —0.07 angenommen und die Abtheilung >7 als zu unsicher ganz vernachlässigt.

Tafel 11.

Gould		5.25	5.7	6.0	6.3	6.6	6.9
SD Nord	0^h und 1^h	±0.13	±0.31	±0.24	±0.22	±0.18	±0.24
	6 » 7	0.30	0.29	0.20	0.20	0.25	0.24
	12 » 13	0.20	0.20	0.28	0.16	0.20	0.22
	18 » 19	0.22	0.25	0.35	0.14	0.20	0.19
Süd	2 » 3	0.23	0.14	0.22	0.16	0.22	0.20
	8 » 9	0.23	0.13	0.17	0.23	0.20	0.20
	14 » 15	0.10	0.28	0.29	0.18	0.17	0.15
	20 » 21	0.16	0.21	0.11	0.22	0.21	0.20
	Durchschnitt	0.19	0.23	0.23	0.19	0.20	0.21

Tafel 12.

6.9 Gould =	6.83 SD	w. F. =	0.21
6.6	6.56		0.21
6.3	6.28		0.21
6.0	6.00		0.23
5.7	5.70		0.24
5.4	5.38		0.18
5.1	5.11		

Auch hier sind zwar im Mittel die wahrscheinlichen Fehler in Tafel 11 die kleineren, in Tafel 12 die grösseren, der Unterschied ist aber noch geringer als bei der Vergleichung mit Lalande. Ein irgend bedeutender Unterschied in den Grössenschätzungen, der als Function der Rectascension aufgefasst werden könnte, ist somit in den Unterschieden zwischen Gould und mir nicht merklich.

Ueber die Genauigkeit der Grössen der Uranometria Argentina finde ich in diesem Werke nur die Zahlenangaben S. 105 und 106, welche den wahrscheinlichen Fehler der Schätzungen im Mittel zu beiläufig 0.75 ergeben; selbst mit Berücksichtigung der Unsicherheit, die in den persönlichen Gleichungen übrig geblieben sein mag, wird er kaum 0.09 betragen. Die Grössen beruhen nach S. 100 auf durchschnittlich $4\frac{1}{8}$ Schätzungen, der Antheil der Uranometria Argentina an den Fehlern in Tafel 12, wie er auf diesem Wege gefunden wird, ist demnach kleiner als 0.05, und der wahrscheinliche Fehler meiner Grössen 0.21, der der einzelnen Schätzungen 0.36.

5. Vergleichung meiner Grössenschätzungen unter sich.

Um die vorigen Untersuchungen zu vervollständigen habe ich zuvörderst für einige tausend Sterne, von welchen je zwei (aber nicht mehr) Schätzungen der Grösse vorlagen, die Summe der Abweichungen dieser Schätzungen von einander gebildet. Aus jeder Stunde wurde dazu ein Declinationsgrad verwendet, abwechselnd im nördlichen und im südlichen Theile; ausser den bekannten Veränderlichen wurde kein Stern ausgeschlossen. Die gefundenen Abweichungen sind wie folgt nach Viertelgrössen vereinigt:

(13)

Grösse	Summe der Abweichungen	Anzahl der Sterne	Grösse	Summe der Abweichungen	Anzahl der Sterne
	m			m	
$9^1/_2$	118.2	968	8	15.0	99
$9^1/_4$	149.0	528	$7^3/_4$	25.4	50
9	53.3	501	$7^1/_2$	13.8	41
$8^3/_4$	71.7	173	$7^1/_4$	21.8	35
$8^1/_2$	19.4	139	7	10.3	28
$8^1/_4$	58.8	121	$6^3/_4$	3.5	10

Für die schwächste der geschätzten Grössen, die zehnte, würde man auf diese Weise einen sehr geringen Fehler finden, aber diese grosse Genauigkeit wäre nur eine scheinbare; auch die Grösse $9^3/_4$ ist noch dadurch beeinflusst, dass Schätzungen unter 10^m nicht vorkommen. Die Sterne 6.7^m finden sich in zu geringer Zahl, und sind deshalb nicht weiter berücksichtigt.

Obwohl ich öfters als bei der älteren Arbeit die Grössenschätzungen durch beigefügte Bemerkungen, wie gut, hell, schwach, genauer zu machen gesucht habe, ist es auch jetzt ein häufig vorkommender Fall, dass die Abweichung der Schätzungen von einander genau eine halbe Grösse beträgt. Fälle dieser Art gehören meist zu den Argumenten $9^1/_4$, $8^3/_4$ ...., deshalb haben sich bei diesen die grossen Fehler besonders angehäuft, und es müssen also, um eine richtige Vorstellung von der Abhängigkeit der Fehler von der Helligkeit zu erhalten, die Summen, welche bei diesen Viertelgrössen stehen, auf die benachbarten Argumente $9^1/_2$, 9 .... vertheilt werden. Ich habe dies im Verhältniss 3 : 2 gethan, welches nahe dasjenige sein wird, das für die Berechnung der Grössen des Sternverzeichnisses maassgebend war. Man hat dann folgende Werthe:

(14)

Grösse	Summe der Abweichungen	Zahl der Sterne	Durchschnittliche Abweichung	Wahrscheinlicher Fehler der einzelnen Schätzung	Wahrscheinlicher Fehler der Grössen im Verzeichniss
	m			m	m
$9^1/_2$	207.7	1285	0.162	$\pm$0.10	$\pm$0.06
9	155.9	816	0.191	0.11	0.08
$8^1/_2$	83.5	281	0.298	0.18	0.12
8	53.5	177	0.302	0.18	0.12
$7^1/_2$	37.1	82	0.452	0.27	0.17
7	21.1	48	0.440	0.26	0.16

Die letzte Columne ist unter der Annahme berechnet, dass die Durchschnittszahl der Beobachtungen für die Grössen $9^1/_2$ bis 8 je 2.3 beträgt, für die beiden helleren Abtheilungen 2.6. Die Werthe für die Grösse 7 sind wegen der geringen Anzahl der Sterne nicht sehr sicher. Noch geringer wäre die Sicherheit für die helleren Sterne bis 5^m geworden, wenn ich sie eben so wie die anderen hätte behandeln wollen; denn sie haben überwiegend oft als Fixpunkte bei den Revisionen gedient, und ihre Grössen sind dabei meist von neuem bestimmt worden. Die öfters als zwei mal beobachteten bilden die grössere Mehrzahl, die Durchschnittszahl der Beobachtungen ist 2.9. Um hier die Fehler etwas genauer, und in einer Form zu finden, die sie unmittelbar mit den in Tafel 12 gegebenen Werthen vergleichbar macht, habe ich dieselben unter den gleichen Argumenten wie dort vereinigt, indem ich aus jeder zweiten Stunde sieben Grade der Declination, alles ganz gleichförmig vertheilt, zu Grunde legte. Die benutzten Specialcataloge sind aus

0^h die Grade $-2°$, $-5°$ ... bis $-20°$; aus 2^h die Grade $-4°$, $-7°$ ... $-22°$, aus 4^h $-3°$ ... $-21°$; ferner 6^h $-2°$ u. s. w.; im ganzen 84. Dieselben ergeben die Summe der Fehlerquadrate für die Grösse

	m	m				m	m
	6.9	34.45	bei 360	Beobb. von 123	Sternen; w. F. =	±0.26	±0.15
	6.6	22.81	241	85		0.26	0.15
	6.3	6.78	108	39		0.21	0.12
	6.0	13.60	114	38		0.29	0.17
(15)	5.7	11.92	66	23		0.36	0.21
	5.4	4.15	27	9			
	5.1	4.33	24	9			
	oder wenn die beiden letzten Grössen vereinigt werden						
	m	m				m	m
	5.25	8.48	bei 51	Beobb. von 18	Sternen	±0.34	±0.20
	und im ganzen	98.04	940	326		±0.27	±0.16

Von den beigefügten wahrscheinlichen Fehlern ist der erste der der einzelnen Schätzung, der zweite der durchschnittliche des Sternverzeichnisses. Der Anschluss der Reihe (15) an (14) ist über Erwarten gut. Auch hier zeigt sich ein Abnehmen der Genauigkeit der Schätzung mit zunehmender Helligkeit der Sterne; die Schwankungen, namentlich in der Reihe (15), sind jedenfalls überwiegend durch die Unsicherheit der einzelnen Zahlen zu erklären.

10.

Die Zusammenstellung der Resultate des vorigen Abschnittes namentlich mit den von Argelander in Band 3 gegebenen zeigt sogleich, dass sich zwar meine Grössen an ein bekanntes System, z. B. das der früheren Bonner Arbeit, mit einiger Sicherheit anschliessen lassen, dass aber bei der Bestimmung der wahrscheinlichen Fehler viele Zweifel übrig bleiben. Denn die Vergleichung meiner Beobachtungen unter sich gibt diese Fehler kleiner als die Vergleichung mit andern, es sind also ausser den ganz zufällig wirkenden und ausser den noch im Endresultat constante Unterschiede ergebenden Fehlerquellen noch andere wirksam, welche bei den einzelnen Sternen die Schätzungen beeinflussen und zur Folge haben, dass der Fehler eines Mittels aus n Schätzungen viel grösser ist als der der einzelnen Schätzung dividirt durch $\sqrt{n}$. Am deutlichsten tritt dies bei den Fehlern der Werthe SD—Gould hervor, weil die zufälligen Fehler der Grössen der Uranometria Argentina sehr klein sind.

Das Zusammenhalten der Zahlen in (15), letzte Columne, mit denen in Tafel 12 zeigt, dass in den Unterschieden der definitiven Grössen, wie sie in Cordoba und Bonn bestimmt sind, Fehler im Durchschnittsbetrage ± 0.13 unerklärt geblieben sind. Aehnliches ergibt die Vergleichung mit Bessel's schwächeren Sternen, etwas günstiger ist das Resultat der Vergleichung mit Argelander. Die Fehler für Bessel's hellere Sterne und für Lalande lassen sich nicht in gleicher Art beurtheilen, weil die Beiträge, die Bessel und Lalande für sich zu den Werthen der Tafeln 3 und 9 liefern, nicht so genau bekannt sind.

Die Fehler der erwähnten Art rühren entweder von einer mehr oder weniger allgemein verbreiteten Veränderlichkeit des Fixsternlichtes her, oder sie gehören zu der Kategorie der persönlichen Fehler. Die erstere Ansicht hat neuerdings namentlich durch die schwer wiegende Autorität von Gould eine bedeutende Stütze erhalten*). Aber für die Beurtheilung der hier ge-

*) The experience obtained during this work in Albany forced upon me the strong suspicion, which has in Cordoba grown into a firm conviction, that stellar variability is by no means an exceptional phenomenon, but that a very large

fundenen Unterschiede werden doch nur mässige Theile solcher Veränderlichkeit in Betracht kommen, nämlich im allgemeinen die Lichtschwankungen von sehr langen Perioden, während der wahrscheinliche Betrag der Schwankungen von kürzeren Perioden schon in den Zahlen (15) und den analogen enthalten ist. Deshalb bin ich geneigt, auch hier vorwiegend persönliche Fehler anzunehmen, was freilich von einer klaren Vorstellung von ihrer eigentlichen Natur noch weit entfernt ist. Und wenn man der Ansicht sein wollte, dass der grössere Theil derselben mir selbst zur Last fällt, so würde ich kaum einen einwurfsfreien Gegenbeweis liefern können. Indessen lassen sich doch einige Umstände angeben, die mir nicht bloss bei mir selbst gewirkt zu haben scheinen, insbesondere der folgende. Abgesehen von dem Einfluss der Sternfarben existirt, glaube ich, bei allen Beobachtern eine Tendenz, sich durch nahe stehende Sterne in der Schätzung der Helligkeit beeinflussen zu lassen (bei mir in dem Sinne, dass ich mässige Helligkeitsunterschiede in der Regel durch zu starke Grössenunterschiede ausdrücke). Fehler dieser Art sind aber gewiss Functionen der Intensität der Lichtempfindung und der Entfernung der Netzhautbilder von einander, d. h. solche der Sterngrössen und der angewandten Objectivöffnung und Vergrösserung, sie werden also anders bei den Beobachtern an Meridianinstrumenten gewirkt haben als bei mir, und wiederum anders bei den Beobachtungen im Opernglase und mit freiem Auge.

Die einzigen aus den in Nr. 9 gefundenen wahrscheinlichen Fehlern mit Sicherheit zu ziehenden Resultate scheinen mir zu sein, dass diese Fehler, was meine Beobachtungen anlangt, im allgemeinen etwas grösser sind, als aus (14) und (15) für sich folgen würde, und kleiner als die Discussion der früheren Zusammenstellungen anzeigt; dass sie für die lichtschwächeren Sterne kleiner sind, als für die helleren; und ferner, dass die Fehler der Endresultate mit der wachsenden Zahl der Schätzungen zwar etwas abnehmen, aber langsamer als reciprok der Quadratwurzel aus dieser Anzahl. Die letztere Eigenschaft theilen meine Beobachtungen mit sehr vielen anderen; was das erstere anlangt, so kann ich für jetzt die Zeit nicht finden, um den Versuch zur genaueren numerischen Feststellung zu machen, hoffe aber, dass dies demnächst von hier aus nachgeholt wird; zunächst dürfte die Ermittelung der Grenzen, wie sie oben gegeben ist, genügen.

Viel sicherer hat sich die Reduction der Grössenscala auf die der ersten drei Sectionen ausführen lassen, allerdings unter der Voraussetzung, dass die Bessel'schen Grössen (und ebenso die Lalande'schen) für das Areal der vierten Section denen am Nordhimmel gleichartig sind. Diese Voraussetzung könnte für Bessel im allgemeinen weniger zutreffend erscheinen als für Lalande, da die nördliche Hälfte der Königsberger Zonen viel später vollendet ist als die südliche, während in der Histoire céleste die grossen und kleinen südlichen Zenithdistanzen in buntem Wechsel vorkommen. Aber für seine Grössenvergleichungen hat Argelander ganz überwiegend nur Sterne aus den früheren Bessel'schen Zonen, die der ersten Section des Bonner Sternverzeichnisses angehören, benutzt, und für diese weicht die Beobachtungsepoche nur wenig von der der südlicheren Sterne ab. Von den verschiedenen Täfelchen, die Argelander in der Einleitung zu Band 3 gegeben hat, können hier nur für Bessel das zweite auf S. XVIII, für Lalande das auf S. XIX angewandt werden. Diese sind in ganz gleicher Weise mit denselben Argumenten gebildet wie meine Tafeln 3 und 9, während bei den ausgeglichenen S. XX fremdartige Elemente eingeführt sind, die mir nicht ganz einwurfsfrei scheinen. Die Vergleichung der Durchmusterung mit der Uranometria Argentina findet sich in dem letzteren Werke S. 47.

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proportion of the fixed stars exhibit fluctuations of brightness. Only the narrow range of these variations prevents of their being recognized. Without venturing to express a yet stronger opinion, it appears to me probable that at least one-half of the stars, above the seventh magnitude, vary by an amount which careful observation cannot fail to detect. (U. A. p. 19.)

Bei Anwendung des Mittelgliedes Bessel zeigt sich durchweg eine gute Uebereinstimmung zwischen der vierten Section (SD) und den früheren (DM). Dasselbe ist bis aufwärts zur Grösse $8^1/_2$ der Fall, wenn Lalande diesen Uebergang vermittelt; bei den helleren zeigt sich hier eine erst langsam anwachsende, dann ziemlich constant bleibende Differenz in dem Sinne, dass SD heller schätzt. Die Uranometria Argentina bestätigt diesen letzteren Umstand, und zeigt zugleich, dass er sich nicht über die Grösse 6^m hinaus fortsetzt. Da das Gewicht der einzelnen Vergleichungen sich nicht mit genügender Sicherheit angeben lässt, so habe ich bei der Ausgleichung durch eine Curve allen gleiches Gewicht gegeben. Die folgende Zusammenstellung gibt zuerst die Argumente aus den obigen Tafeln 3, 9, 12 und die zugehörigen Grössen SD, sodann die gleichartigen Grössen DM nach den angeführten Quellen, und die Abweichung der ausgleichenden Curve im Sinne C—DM in Hunderttheilen der Grössen; endlich zur Seite die interpolirten Curvenwerthe.

Tafel 16.

$9^1/_2$	Bessel	9.08	9.18	— 6	
9	»	8.81	8.82	+ 2	
$9^1/_2$	Lalande	8.73	8.72	+ 3	
9	»	8.53	8.53	+ 2	
$8^1/_2$	Bessel	8.35	8.35	+ 3	
$8^1/_2$	Lalande	8.26	8.35	— 5	
8	Bessel	7.96	7.96	+ 6	
8	Lalande	7.88	8.04	— 9	
$7^1/_2$	»	7.46	7.68	—11	
$7^1/_2$	Bessel	7.40	7.45	+ 7	
7	Lalande	7.07	7.27	— 7	
7	Bessel	6.94	6.94	+14	
6.9	Gould	6.83	7.05	— 9	
$6^1/_2$	Lalande	6.71	6.89	— 5	
6.6	Gould	6.56	6.71	— 3	
6.3	»	6.28	6.37	0	
6	Lalande	6.22	6.42	—12	
$6^1/_2$	Bessel	6.19	6.14	+13	
6.0	Gould	6.00	6.02	+ 3	
6	Bessel	5.86	5.75	+14	
5.7	Gould	5.70	5.65	+ 3	
5.4	»	5.38	5.30	— 1	
5.1	»	5.11	4.98	+ 2	

$9^m.0$ SD	$9^m.04$ DM
8.5	8.52
8.0	8.06
7.5	7.61
7.0	7.14
6.5	6.62
6.0	6.05
5.5	5.44
5.0	4.88

Ich habe hier die hellsten Sterne mit aufgeführt, obwohl für diese DM eigentlich wenig Bedeutung hat. Ihre Weglassung würde die ausgleichende Curve nur ganz unbedeutend geändert haben. Diese letztere, oder die oben in Tafel 16 angeführten, aus ihr interpolirten Werthe halte ich für das wichtigste Resultat meiner Grössenvergleichungen, und bezweifle, dass die an sich höchst wünschenswerthe Vervollständigung der letzteren die Relationen zwischen SD und DM irgendwo um mehr als höchstens $^1/_{12}$ Grösse, um die Grenze nicht enger zu stecken, ändern wird. Die Anschlüsse der anderen Cataloge an diese Reductionstafel sind nach Nr. 9 leicht herstellbar.

11.

Die Anordnung der vierten Section des Sternverzeichnisses ist mit geringen Ausnahmen die gleiche wie bei den drei ersten Sectionen; es sind also für jeden Stern 4 Columnen gegeben, die Grösse, Rectascension und Declination für 1855 und Nachweis einer genaueren Position enthalten. Die Ausnahmen bestehen hauptsächlich in dem Fortschreiten der Zonen von Nord nach Süd, der Vervollständigung in dem Nachweis der Sterne in Meridian-Catalogen, und in einigen Anmerkungen unter dem Text.

Bei dem Nachweis der Sterne bedeutet

B die Bände 6 und 7 der Bonner Beobachtungen

Sj Schjellerup's Stjernfortegnelse, Kopenhagen 1864

K Bessel's Zonen in Band 7 bis 10 der Königsberger Beobachtungen

A Argelander's südliche Zonen in Band 2 der Bonner Beobachtungen, im allgemeinen nach Oeltzen's Catalog

CZ Gould's Zonen-Catalog, Band 7 und 8 der Resultados del Observatorio Nacional Argentino en Cordoba

L Lalande's Histoire céleste

S Struve's positiones mediae, St. Petersburg 1852

R Rümker's Catalog von 12000 Fixsternen, und dessen Neue Folge, Stunde 0 bis einschl. 6.

M die Lamont'schen Cataloge nach den Münchener Zonenbeobachtungen, ausgenommen die in Supplementband XIV enthaltenen Nachträge, die mir zu spät bekannt wurden

P Piazzi's Catalog, Palermo 1814

G der Göttinger Catalog von Copeland und Börgen, Göttingen 1869

WC Yarnall's Washington-Catalogue, Ausgabe von 1878

WZ die Zonenbeobachtungen in den Bänden der Washington Observations for 1869, 1870, 1871.

Ein Nachweis dieser Art schliesst das Vorkommen des betreffenden Sternes in einem später aufgeführten Cataloge nicht aus. Für die Zone $-15°$ ist A vor K bevorzugt, und in einzelnen Fällen konnte das Urtheil, ob ein Stern in einem Cataloge mit einem Fehler behaftet sei, nicht vollständig festgestellt, die Bezeichnung in der vierten Columne also nur mit einigen Zweifeln gewählt werden. Ausführlichere Angaben hierüber muss ich mir für die später zu veröffentlichenden Fehlerverzeichnisse vorbehalten. Mehrere inzwischen aufgefundene Fehler lassen mich befürchten, dass diese vierte Columne wenigstens bezüglich der Rangordnung der Cataloge nicht so correct bearbeitet ist, wie ich dachte. Die Grössen der hellsten Sterne, bis $3^1/_4{}^m$ abwärts, sind nur beiläufig angegeben; die Positionen der stark bewegten schliessen die Eigenbewegungen bis 1880 in sich. Unter dem Text sind angegeben zunächst ausgezeichnete Sternfarben, wenn solche mehr als einmal von mir notirt, oder, bei nur einmaligem Anmerken, durch andere Beobachter bestätigt sind; sodann Nachweise von Nebelflecken in J. Herschel's Catalogue of Nebulae and Clusters of stars (Phil. Trans. 1864 I, mit GC bezeichnet), wenn solche von mir als gewöhnliche Sterne notirt sind; andere Bemerkungen über Nebel; desgl. über Sterne, die von zuverlässigen Beobachtern als veränderlich angegeben sind, während ich selbst nicht im Stande war mir hierüber ein festes Urtheil zu bilden; eine Anzahl von Resultaten aus Bonner Meridianbeobachtungen, die grösstentheils zur Prüfung vermutheter Eigenbewegungen angestellt und bis jetzt noch nicht veröffentlicht worden sind. Die von Argelander oder seinen Gehülfen angestellten beruhen auf dem Fundamental-Catalog von Wolfers; seit 1876 sind derartige Be-

obachtungen von den Herren Deichmüller oder Scheiner angestellt und mittelst des Catalogs der Astronomischen Gesellschaft (Publ. XIV) reducirt.

In der Zone -2° ist ferner unter dem Text noch der Nachweis der Sterne gegeben, welche auch in der Zone -1°, Band 3, vorkommen. Da die Südgrenze dieser Zone eigentlich $-2^{\circ}\,1'$ statt $-1^{\circ}\,60'$ ist, so ist die Zahl dieser gemeinsamen Sterne nicht unbeträchtlich.

Endlich folgen hier die Sterne, welche ich an den Grenzen der Arbeit mitbeobachtet habe, ohne anders als in den dem Haupttheile allernächsten Minuten Vollständigkeit zu erstreben; hierüber ist S. [21] zu vergleichen. Auf den Karten ist die Zone -1° wieder mit aufgenommen, um den Anschluss an die früheren in gleicher Weise herzustellen, wie dies an den Grenzen bei $+20^{\circ}$, $+40^{\circ}$ u. s. w. geschehen ist. Hierbei wurden noch mehrere Fehler in derselben gefunden und ebenso wie die bereits in früheren Bänden oder an verschiedenen Stellen der Astronomischen Nachrichten angezeigten (diese jedoch sämmtlich erst nach erneuter Prüfung) verbessert. Diese Verbesserungen sind am Schlusse S. [55, 56] sämmtlich zusammen gestellt, soweit sie sich auf die Positionen und Grössen beziehen; von den Fehlern in den Catalognachweisen aber nur diejenigen, die ich als wirkliche Fehler betrachte, nicht aber die vielen Fälle, in denen die in der ersten Zeit der Durchmusterung nicht regelmässig verglichenen Cataloge von Rümker und Struve nicht angegeben, oder die in Band 6 gegebenen Bonner Positionen nicht nachgewiesen sind. Auch sind die Sterne nicht nachgetragen, die in den Durchmusterungszonen nur einmal vorkommen und deshalb in Band 3 nicht aufgenommen, inzwischen aber durch neuere Cataloge bestätigt worden sind. Diese Sterne hätten Untersuchungen erfordert, welche ausserhalb meines Arbeitsplanes lagen.

Ich schliesse mit dem Wunsche, dass sich das in diesem Buche enthaltene Sternverzeichniss eben so nützlich erweisen möge, wie die früheren, nach Argelander's Plänen und unter seiner Leitung bearbeiteten Sectionen. Seit dem Beginne der Beobachtungen, auf denen es beruht, hat allerdings die Ausbildung der Photographie den Standpunkt der Wissenschaft sehr verändert. Doch hoffe ich, dass auch dann, wenn eine photographische Aufnahme der hier bearbeiteten Zone vorliegt, die Vergleichung des Sternverzeichnisses noch von Interesse sein wird.

Zur Zone -1° gehörige Sterne.

1—20				21—40				41—60				61—80				81—100			
m	h	m	s	m	h	m	s	m	h	m	s	m	h	m	s	m	h	m	s
*9.0	0	1	26.4	9.8	0	57	13.6	10	1	53	28.6	*9.2	3	19	16.4	9.7	4	9	45.6
*7.8		4	6.3	*9.2	1	0	10.0	*9.5		58	39.2	*9.2		28	55.7	*9.5		14	28.7
*9.5		6	55.4	*9.4			11.0	*9.5		59	42.3	*9.4		37	5.4	*8.9		16	9.2
10		7	27.5	*9.4			19.4	*8.9	2	8	45.7	*9.4			23.0	9.8			22.2
*9.7		11	12.5	9.3			29.2	*9.3		12	53.1	*9.5		39	36.3	*9.6		18	13.2
*10		18	57.9	*10			48.4	*8.8		35	5.2	*9.3			47.3	9.5			16.3
10		19	13.0	9.9			52.4	*8.3		39	10.8	*8.3		41	4.5	10		19	37.5
*7.3		22	20.2	9.8		2	6.6	*8.9		46	30.3	*8.8			55.6	*9.5			55.6
9.8		24	45.9	*9.0			23.4	*9.6		48	3.8	*7.0			57.3	9.9		23	35.2
*9.1		31	34.4	9.5		7	30.2	*9.4		50	56.1	*7.0		42	55.2	9.5		27	28.0
*9.7		37	39.1	9.9			54.2	*9.1		52	9.8	*9.6		44	42.8	9.3			51.0
*8.6		38	20.4	10		11	58.4	*9.3		57	28.0	9.5			49.5	10		31	41.6
*9.0		39	47.4	*9.7		12	30.6	*9.3			28.9	*9.2		46	10.5	10		32	5.9
*9.5		40	11.5	9.7		13	18.3	10		59	38.4	*8.0		49	22.6	10		33	43.9
*4.5		45	35.9	*9.5		15	17.2	*10	3	2	44.2	9.3		53	32.5	*9.0		34	11.6
*8.5		52	10.1	*8.8		20	4.6	*9.5		3	12.2	*5.0		54	11.4	*8.5			48.0
*9.8		53	18.9	10		34	8.5	*9.1		4	10.6	*9.0		57	0.0	*10		40	0.8
9.5			20.1	*9.4		42	29.2	10			30.2	*9.4	4	4	59.7	10			2.8
10			45.5	*8.7		47	5.1	9.5		14	17.0	*8.0		6	57.7	*9.2			12.7
10		54	23.3	*9.0		52	37.2	*9.2		17	12.5	*8.9		8	22.7	10		45	27.8

1—20		21—40		41—60		61—80		81—100	
m	′	m	′	m	′	m	′	m	′
*9.0	56.6	9.8	53.9	10	55.9	*9.2	57.7	9.7	52.6
*7.8	55.7	*9.2	53.5	*9.5	56.2	*9.2	56.0	*9.5	54.9
*9.5	59.6	*9.4	55.6	*9.5	58.8	*9.4	51.2	*8.9	55.8
10	56.8	*9.4	28.6	*8.9	57.8	*9.4	54.7	9.8	58.8
*9.7	57.4	9.3	46.6	*9.3	57.0	*9.5	53.7	*9.6	55.0
*10	50.3	*10	28.7	*8.8	56.5	*9.3	54.2	9.5	59.6
10	55.8	9.9	39.9	*8.3	59.9	*8.3	58.8	10	53.6
*7.3	54.8	9.8	19.8	*8.9	55.9	*8.8	57.0	*9.5	55.2
9.8	54.1	*9.0	30.5	*9.6	57.8	*7.0	54.1	9.9	56.8
*9.1	57.9	9.5	39.8	*9.4	59.5	*7.0	58.0	9.5	58.8
*9.7	56.3	9.9	59.2	*9.1	59.1	*9.6	49.5	9.3	56.6
*8.6	59.2	10	58.9	*9.3	57.8	9.5	36.5	10	58.5
*9.0	56.6	*9.7	57.6	*9.3	52.9	*9.2	50.9	10	58.7
*9.5	58.0	9.7	56.3	10	55.1	*8.0	59.8	10	56.1
*4.5	55.8	*9.5	58.6	*10	47.8	9.3	55.2	*9.0	59.5
*8.5	58.7	*8.8	56.4	*9.5	45.6	*5.0	57.3	*8.5	56.8
*9.8	55.1	10	58.5	*9.1	55.7	*9.0	54.7	*10	57.7
9.5	57.9	*9.4	56.8	10	59.1	*9.4	59.6	10	59.0
10	54.5	*8.7	55.3	9.5	59.2	*8.0	59.6	*9.2	59.4
10	54.5	*9.0	54.4	*9.2	59.9	*8.9	56.6	10	52.1

101—160				161—220				221—280				281—340				341—400			
m	h	m	s	m	h	m	s	m	h	m	s	m	h	m	s	m	h	m	s
*8.0	4	46	52.2	*9.4	6	26	3.0	*9.4	7	19	27.0	*9.2	8	59	36.1	*8.5	10	43	7.2
*9.4		48	25.4	*9.2			39.1	*7.5		23	41.5	*7.0	9	0	40.7	9.3		51	56.0
9.3			39.6	*9.5		27	13.5	*9.3		24	35.5	9.5		2	5.4	9.5		58	40.9
*8.8			41.2	*8.7		29	39.3	*9.5		27	47.0	*9.0		3	50.4	*10		59	24.9
9.8			56.1	*9.0		31	11.4	9.5		28	10.5	9.8		4	54.9	10			29.9
*9.3		51	25.8	*9.5		33	34.3	9.5		31	25.9	9.5		6	59.6	*8.3	11	1	29.9
*10		54	44.4	*9.7		35	11.1	9.3		32	58.9	*9.0		9	58.6	*9.3		2	5.4
*9.1			54.7	*8.9			41.3	*9.1		34	8.0	*9.4		10	42.0	9.9		17	6.5
*9.3		55	37.8	*9.5		36	44.6	9.4		36	17.6	*9.5		11	18.3	9.8		22	3.4
*9.0			56.0	9.8		37	17.0	*9.0			21.0	9.5			20.0	10		27	3.0
*9.5	5	2	31.4	*9.6			21.9	*8.3		42	39.3	*7.5			48.1	10			12.9
*8.5		3	38.3	*9.3			26.0	*8.3		45	20.3	*9.0		14	8.2	*9.0		29	32.9
9.5			45.3	*9.2			32.5	*9.5			22.3	*8.8		15	15.0	*9.4		31	23.8
*9.0		5	0.3	*9.0			54.3	*8.9		46	41.9	*9.6			44.0	*9.2			29.9
*9.5		8	15.0	*9.3		38	16.2	9.5		47	24.6	*9.5		17	30.1	*8.7		32	5.1
*9.2		10	12.4	*9.1		39	13.7	*9.4		48	49.4	9.5		21	14.1	9.5		33	5.9
*9.7			55.0	*9.5		41	33.4	*9.4		52	12.9	*9.5			16.0	*8.5			31.1
*9.3		11	46.4	*9.6		42	4.5	*9.1		53	6.4	*9.2		23	16.4	*9.5		34	10.9
*9.5		18	28.4	9.5			7.4	*9.1		54	10.6	9.7		25	1.0	*9.5		37	47.0
*9.3		19	21.4	*9.0			36.9	*7.7		55	21.3	*8.9		26	19.9	*9.5		38	4.0
*9.5			49.4	*9.0		44	38.9	*9.4		58	6.4	9.6			26.9	*9.5		40	17.9
*8.0		20	25.3	*9.8		45	41.1	*7.5		59	7.1	*9.4		29	31.0	*9.5			23.9
*9.5		21	15.3	9.7		46	4.3	*9.0			8.9	9.7			42.5	*8.8		42	11.4
9.5			52.3	*9.5		47	0.4	*9.1	8	1	45.9	9.5		30	13.5	*9.5			35.8
*9.0		24	12.3	*9.5			25.7	*8.8		2	15.0	10		33	31.0	*9.3		43	23.9
*8.5			24.4	*9.3			37.9	*9.0			30.2	*9.4		34	51.0	*10		45	14.9
9.5		25	4.4	*9.5		49	25.8	9.8		5	9.4	*9.3		35	50.0	*9.1		49	17.3
*9.2			22.3	9.5		51	4.3	9.4		6	51.7	*7.8		38	43.0	10			24.1
*8.5		28	14.6	*9.5			6.0	*9.1		10	23.9	*8.5		39	57.0	*9.5		54	7.9
9.7		30	46.6	9.5		52	22.2	*9.5		13	37.6	*8.3		42	36.2	*9.3			19.8
*9.5		33	36.6	*9.1		53	57.4	9.5			45.9	*9.1		43	2.9	9.9	12	1	58.8
*9.2		38	9.0	*9.4		54	7.0	*9.5		15	9.9	9.7		44	29.0	*9.0		8	10.7
*8.5		41	44.0	9.5		55	1.3	*8.8		17	0.8	*7.8		47	11.9	*8.2		9	18.7
*9.3			58.0	*9.0			33.1	9.5		18	20.3	*9.5		50	20.4	*10		10	12.8
*9.0		44	25.4	9.5		56	22.7	*9.2		20	5.4	*9.4			56.4	*8.8		14	55.7
*9.0			48.8	*9.5			28.5	*8.6			22.9	9.5		53	3.4	*9.5		19	34.7
*9.3		45	19.7	*9.7			59.4	9.7		21	3.8	9.4		54	33.0	*9.1		20	6.7
*9.0			37.0	9.4		57	29.1	*9.2		22	21.1	*9.4		58	51.6	*8.8		21	0.2
*7.8		47	49.0	*9.4		58	5.4	*8.0			59.1	10	10	0	58.8	*9.3		23	7.8
9.5		49	34.0	*9.1			10.9	9.7		23	13.5	10		1	5.9	*9.3		28	20.3
*9.3		58	19.9	*9.3	7	0	33.7	9.5		24	35.3	9.5			18.6	*10		29	42.3
*8.5	6	0	1.9	*9.3		2	25.9	9.4		29	45.8	9.6		4	39.3	*9.0		33	5.3
*9.2			28.9	*9.5			29.2	*10		31	51.0	10		7	14.7	*9.3		34	16.3
*8.0		1	0.9	*9.5		3	13.9	*8.8		33	16.4	9.3		9	16.5	*8.8			22.2
9.6		2	18.5	9.5			48.3	9.6		38	35.8	9.4			48.2	*9.5			29.5
*8.5		3	2.9	*9.3			52.3	*7.8		41	7.8	*9.0		10	36.9	*8.8		35	56.4
*9.4			7.9	9.7		4	8.8	*9.0			53.7	*9.3		12	24.5	*9.2		37	13.4
*9.3			43.3	*9.7		5	22.6	9.8		44	48.0	*9.0			59.4	9.5		49	57.2
*8.8		4	7.4	*10		8	52.7	10		45	2.0	*9.4		14	21.2	*9.2		50	9.2
9.4		6	3.3	*9.0		11	40.1	*8.9		46	51.0	*8.5		17	13.7	*9.3		52	57.3
9.5			4.5	*9.3			52.4	9.6			54.6	9.8		18	46.7	10		57	12.3
*9.2		7	34.3	*9.4		12	35.3	*9.4		50	4.4	*8.5		20	34.9	*9.2		58	52.8
10		10	32.0	*9.5		15	19.9	10			16.5	9.6		23	8.9	9.5	13	1	1.7
*8.1		12	57.5	*9.5			58.6	9.8		51	28.5	9.3			40.5	*8.0			2.2
*8.5		14	42.5	*9.3		16	21.7	*9.3			53.8	*8.5		24	45.6	10		2	51.2
*9.5			51.5	*9.4			24.5	*8.5		52	37.0	*9.0		25	59.6	*8.7		3	30.4
9.8		15	59.2	*9.5		17	40.3	*8.2		53	56.0	10		39	27.1	9.5		9	58.2
*9.6		16	2.2	*9.3		18	15.9	*9.0		54	3.7	9.7		41	52.1	10		17	14.5
9.5		19	9.7	*7.1			38.9	*9.3		59	9.1	*8.3		42	30.1	*10		18	47.5
*9.5		21	23.8	*9.3		19	9.3	9.4			18.6	10			50.6	9.7		19	16.5

401—460				461—520				521—580				581—640				641—692			
m	h m s		′	m	h m s		′	m	h m s		′	m	h m s		′	m	h m s		′
*9.1	13 28 20.4		58.6	9.8	16 52 55.7		55.6	*9.5	18 43 7.0		55.6	*9.5	19 59 30.4		58.1	*8.2	21 54 16.4		49.4
10		53.5	55.5	9.5		54 40.7	59.3	*9.1		11.0	59.0	*10	20 1 54.0		56.1	9.5		56 3.1	59.5
*9.5		43 30.2	57.3	9.5		58 25.5	53.3	*9.3		49.2	56.4	9.5		2 35.3	55.9	*9.3		57 8.4	53.4
10		48 9.4	59.4	9.5	17	0 3.2	55.4	*8.8		44 9.1	55.4	*9.4		3 52.1	54.9	*9.5			24.3	52.1
*9.3		53 40.9	57.8	*7.7		1 11.7	55.0	*6.3		48 51.3	58.8	*9.5		4 56.4	59.1	*8.7		59 1.2	59.9
*9.5		57 57.4	54.1	*9.3		9 28.2	57.4	*9.2		51 53.3	54.7	9.4		6 2.8	59.2	*9.3	22	0 51.4	56.5
9.5	14 2 12.5		58.4	*9.0		13 15.7	55.0	*9.0		53 13.6	57.5	*9.5			34.7	57.3	*9.3		3 30.1	55.4
*9.2		58.2	59.1	9.5		14 46.9	56.4	*9.1		53.0	56.3	9.5		7 23.4	54.8	9.6		4 4.1	57.5
*8.0		3 28.7	59.5	9.5		18 28.2	57.5	9.8		54 40.9	58.7	*7.0		8 54.4	56.2	*8.5			19.9	57.7
*9.7		4 10.2	53.4	*9.4		20 17.4	57.0	9.5		55 10.2	58.9	*9.2		9 27.1	55.3	*9.4		5 35.6	58.2
9.9		7 50.1	58.1	9.6		21 9.7	56.7	*9.3		36.3	58.3	*9.5		11 22.4	56.7	*9.4		7 15.5	59.7
9.5		8 54.1	56.7	9.8		43.2	54.6	9.6		44.4	58.1	*8.7		23 26.5	57.2	*9.5		15 10.3	59.6
9.4		9 17.0	57.2	10		23 2.7	56.9	*9.8		56 34.9	59.1	*8.2		25 11.0	56.6	*7.0		17 6.7	55.2
8.9		45.4	58.9	*9.1		25 39.5	58.0	*9.5		57 1.9	55.3	*9.3			58.1	54.5	9.8		20 9.7	57.8
9.9		10 12.0	59.6	9.3		27 12.7	59.8	*9.3		58 37.2	57.4	*9.3		28 22.3	55.0	9.7			31.6	59.7
10		48.1	54.9	9.5		30 3.7	58.8	*8.0		59 26.0	56.8	*8.8		29 17.1	59.6	9.5		21 29.2	58.4
9.8		13 44.0	59.0	9.8		32 56.2	59.4	*9.3		42.8	54.5	*9.3		34 42.6	56.0	*9.5		26 47.0	54.7
*9.0		21 27.8	55.5	*8.5		36 7.7	55.4	*9.4	19	0 5.0	57.0	*9.1		35 16.9	57.2	*9.3		30 5.5	59.6
9.5		22 0.8	53.2	9.5			36.5	57.5	*9.1		7.6	57.6	*8.7		37 22.0	53.4	*9.5		31 2.6	59.3
9.3		26 56.6	59.2	9.4		38 50.2	57.7	10			33.5	59.7	9.4			40.2	57.0	*9.4			33.0	57.2
*9.2		31 14.0	56.0	*9.0		40 32.0	56.6	9.9			40.6	58.0	*8.7		38 6.2	57.3	10		34 34.5	58.1
9.5		43 23.0	58.6	9.4		43 43.5	53.2	*9.2		1 44.6	56.6	*9.5			58.1	57.1	*8.0		37 53.5	56.2
9.5		45 1.0	55.9	*10			48.7	53.0	*9.5		2 26.4	56.6	*9.0		39 39.5	52.5	10		38 51.5	57.9
*9.0		46 21.1	54.3	*9.0		50 49.9	57.0	*9.5			33.0	55.7	*8.5		47 24.6	54.5	*8.0		46 51.0	49.5
9.6		49 9.0	56.4	9.3		53 14.2	59.1	9.7		5 41.6	58.1	*7.0			38.6	55.0	*8.5		51 41.7	57.4
*9.1		57 30.1	57.9	9.5		55 57.0	55.5	*9.4		6 30.4	58.0	*9.4		48 25.6	53.6	*8.8		54 34.8	59.4
*9.5	15	0 16.3	53.1	9.5		56 40.5	54.8	*9.0			34.8	56.9	*8.8		49 39.7	57.4	*10			54.3	56.9
*9.0		6 29.3	52.3	*8.0		58 0.1	57.8	9.9		7 0.7	57.5	9.8			59.2	59.9	9.6		56 12.6	55.0
*9.4			34.3	54.1	*9.4	18	1 59.9	58.2	10			11.0	57.8	9.7		50 44.6	53.3	*9.2			41.0	55.9
10		7 40.3	54.2	*9.0		3 58.2	53.3	*8.5		8 24.0	59.1	9.5		54 50.5	57.1	9.2		57 35.6	59.0
*8.9		32 43.0	51.4	9.5		4 39.8	59.5	*9.8		9 13.7	53.6	9.8	21	3 48.4	55.9	*9.4	23	1 16.9	58.7
*9.2		38 9.5	54.6	*9.4		5 16.7	59.5	*9.4		10 12.6	57.0	*8.2		4 3.3	53.6	*9.0		4 12.9	55.1
9.3		41 34.6	56.0	9.5		8 57.7	57.1	*9.5		11 10.8	55.2	*8.9			47.9	56.0	*9.5			22.9	56.0
9.2		42 37.0	55.5	*8.5		9 38.3	53.0	*8.4			13.0	50.5	9.5		6 23.0	57.8	10		6 12.9	58.7
9.9			58.2	54.0	*8.2		11 0.4	58.1	9.5			53.8	52.8	*8.7		10 25.4	59.9	9.2		11 3.9	58.3
9.5		43 20.0	56.4	*9.0		12 19.1	59.9	9.8		12 20.6	56.5	9.5			26.9	58.1	*8.7		15 12.2	56.8
*9.2		45 14.9	56.1	9.6		16 32.0	59.6	*8.6			34.0	51.4	9.7		11 47.6	58.1	10		16 12.0	59.2
9.8		53 0.6	56.8	*8.0		17 11.3	56.9	*8.7		13 18.7	59.4	*9.4		12 4.4	57.5	*9.3		18 45.0	55.2
9.7	16	1 33.4	57.1	10		18 30.5	54.8	9.3		18 6.3	55.2	9.7		14 5.0	54.2	10		19 1.0	54.7
*9.0		2 9.1	53.8	*8.5		22 10.3	54.0	*9.5			38.5	58.0	*9.3		23 17.8	56.7	*9.5		22 50.0	54.7
9.8			32.2	50.4	*8.8		57.8	58.7	*8.7	23	2.4	56.4	*9.1		25 37.7	59.8	*9.0		29 44.3	55.0
9.5			42.0	55.8	9.5	24	1.0	59.1	*8.9	24	29.3	55.4	*9.4		28 42.4	56.7	*10		30 43.1	58.9
9.8		4	3.9	57.8	9.5		29.3	54.2	*8.9	28	8.7	59.4	*9.2		30 49.0	59.2	10		31 5.1	56.7
*8.3		6	32.3	58.1	9.5	25	24.1	56.1	*9.0		24.4	55.2	*9.5		31 10.0	55.2	*9.0		34 30.1	54.4
*8.0		7	44.3	57.9	*8.9		41.3	55.7	*9.4	29	10.5	57.2	*9.1		33 38.4	54.3	*9.1		36 57.8	55.0
*8.3		10	37.3	55.3	9.5	26	0.4	55.2	9.8		38.0	55.6	*9.5			50.8	52.3	9.4		40 12.3	59.1
*8.3		16	12.3	55.4	*9.5	28	21.4	57.5	*9.1		57.9	58.3	*9.7		36 40.5	56.8	9.7		43 25.2	58.0
*9.0			33.3	59.2	*8.3	30	20.7	56.1	*9.7	35	47.9	54.7	*9.5		41 58.3	57.9	*9.4		45 2.2	58.4
*8.7		21	1.0	59.1	*9.1	33	17.5	58.8	*9.2	37	34.6	56.8	9.4		42 50.8	59.7	9.5		50 32.2	58.4
*8.3		23	15.6	59.0	*9.5		19.8	52.4	10	39	54.8	55.3	*8.6		44 35.6	57.5	*9.3		51 2.2	53.5
*7.8		24	13.0	56.5	*8.4		45.1	58.2	9.5	42	2.0	53.4	9.5		46 45.1	46.0	*9.1		54 16.9	57.2
*9.3		26	49.6	59.3	9.8	35	11.4	58.9	*8.7		7.9	54.7	*10		47 5.1	44.6	*10		58 23.3	58.9
*8.7		27	42.3	55.7	*9.5		20.9	54.4	*8.9	43	51.7	54.2	9.7			29.1	47.4			
*9.0		28	13.5	58.0	9.4	36	16.9	54.7	9.5	44	46.6	57.7	9.6		49 22.6		55.1			
9.3		40	14.5	53.2	9.3		18.2	59.6	9.4	48	24.1	59.5	*9.8		51 20.4		54.2			
*9.2		43	44.5	57.8	*8.5	37	5.4	55.9	*9.4	49	1.6	55.6	*9.0		52 16.1		46.1			
9.3		45	2.3	58.9	*9.3	39	2.9	58.4	*9.7	50	10.3	59.4	*9.3			37.1	46.1			
9.5		48	14.8	58.8	9.5		11.4	59.5	*9.4	51	1.3	56.8	*9.3		53 42.1		45.6			
*9.2		50	55.4	59.4	*9.3		31.6	59.5	*10		18.0	59.7	10			49.1	43.8			
*9.0		52	35.2	59.1	*9.7		46.7	56.0	*9.4	54	7.9	56.8	9.5		54 8.4		51.6			

482: wahrscheinlich ist —1° 3410 der vereinigte Glanz dieses und des folgenden Sterns

Zur Zone —23° gehörige Sterne.

1—50				51—100				101—150				151—200				201—250			
m	h	m	s	′	m	h	m	s	′	m	h	m	s	′	m	h	m	s	′
8.5	0	5	31.0	4.2	9.0	4	13	43.8	2.5	8.0	6	42	44.2	2.5	9.5	8	10	6.4	0.9	9.4	9	39	58.2	2.2
9.2		9	35.4	2.4	9.3		15	48.8	2.0	9.5		43	37.3	1.2	9.3			38.9	1.5	9.0		40	11.4	2.4
9.0		13	13.2	2.2	9.8		17	17.4	4.8	9.4		46	43.9	5.1	9.8		11	25.8	0.6	9.2			51.8	4.8
9.4		17	49.9	4.5	8.7		19	46.2	0.5	9.4		48	38.6	1.5	9.5		12	50.9	4.0	9.8		44	44.7	0.9
9.1		25	33.9	0.3	9.0		21	56.3	2.4	9.0		51	25.8	1.1	7.2		13	48.3	1.0	8.3		45	46.1	4.9
9.0		28	44.0	0.4	7.3		22	4.3	5.4	9.6		52	37.2	5.0	9.5		14	16.2	3.2	7.8			53.6	2.4
8.6		30	57.6	3.7	9.3		25	4.8	4.5	9.3		58	6.7	0.7	9.7			40.2	1.4	9.8		47	11.6	3.8
8.6		39	0.3	1.9	9.5		28	51.4	0.1	9.3			8.8	2.1	9.0		18	37.7	3.8	9.1			16.7	0.2
10		40	35.2	2.8	9.5			57.9	3.5	8.9		59	26.4	0.1	9.5		20	27.6	0.4	9.8		49	33.0	0.5
9.4		44	42.4	5.4	9.5		32	7.4	2.6	9.5	7	0	41.7	0.2	8.0		23	34.1	3.7	8.8		52	16.9	3.1
9.1		47	38.1	1.4	9.8		39	0.1	4.2	9.8		3	15.1	1.6	9.5		24	17.9	0.5	9.5	10	1	10.5	1.6
9.1		56	20.5	5.1	8.0		40	25.6	2.5	9.0		4	37.1	0.9	8.2		25	22.0	2.9	9.6		4	43.6	0.1
9.5		57	1.2	0.8	9.4			45.1	4.6	9.3		5	58.5	2.9	9.5			25.5	3.4	6.7		7	21.9	5.6
8.0		59	48.8	4.0	8.2		51	54.3	2.2	9.4		6	28.3	3.4	8.2		29	58.4	5.7	9.2		8	57.0	0.8
7.3	1	8	12.7	4.1	6.0		56	37.9	0.4	9.7			28.5	1.2	9.0		33	26.3	4.2	9.5		9	59.8	1.4
8.9		11	41.9	2.0	9.5	5	2	44.1	3.9	9.5		8	39.0	0.6	9.3		35	12.1	1.8	9.0		11	32.4	0.4
9.0		12	47.0	0.2	9.1		3	5.0	1.2	5.0		10	30.4	3.9	9.7		36	54.1	2.0	9.1		13	22.8	2.3
6.3		20	26.0	5.9	8.8			49.6	0.4	7.0			32.4	3.9	8.7		37	40.1	4.6	9.0		15	51.7	6.7
8.5		21	7.0	5.6	9.5		6	36.2	5.3	9.8		14	11.3	3.1	9.9		39	5.8	2.9	9.2			52.1	2.5
9.5		22	58.6	0.6	7.0		9	38.2	3.8	9.2		15	47.6	4.5	9.8			52.8	5.2	9.4		17	38.6	0.1
9.0		23	58.2	2.5	9.2		12	51.8	2.7	9.8		17	41.2	4.1	9.5		41	42.7	1.7	8.0		20	28.0	2.5
9.5		26	12.2	0.2	9.4		13	50.0	1.5	9.8			49.7	0.5	9.8		42	43.6	0.2	9.2		21	51.9	1.5
9.3			24.3	4.2	9.4		18	34.3	1.2	9.1		18	6.2	4.8	9.3		45	17.5	5.6	8.0		23	33.3	6.5
9.1		36	35.8	1.0	9.0		19	55.4	2.6	9.5		20	3.7	4.4	9.4		48	13.1	4.1	9.5		35	35.7	3.8
8.5		42	19.2	4.0	9.2		21	22.4	1.9	8.5		22	20.7	2.9	9.5			38.6	3.3	9.8		41	40.8	4.6
9.5			54.7	1.2	9.0		25	48.8	3.1	9.0		25	22.7	3.7	9.5			41.5	4.5	9.7		48	22.9	2.9
9.4		43	5.2	2.4	9.1		27	55.1	2.0	9.4		31	12.7	4.8	9.3		50	47.5	2.2	9.6		54	35.0	4.9
9.5			12.7	0.4	9.3		32	31.8	0.2	8.2		33	46.9	1.5	9.0		52	22.3	3.1	9.0		56	20.3	0.3
9.5		55	37.2	5.7	8.9		40	58.9	3.5	9.3		34	25.7	6.6	9.3		59	3.3	5.6	9.3	11	0	45.7	1.1
9.4	2	5	16.2	2.2	9.0		42	36.1	3.4	9.1		35	31.4	4.0	9.8			44.1	1.3	8.5			55.2	4.2
9.4		6	58.3	2.8	9.5		43	5.3	4.6	10		36	23.8	1.0	9.0	9	6	18.4	5.4	9.0		5	40.6	1.9
9.5		7	13.9	2.4	6.7			49.9	1.1	9.4			28.2	6.4	9.5		11	17.1	1.2	9.1			44.5	4.1
9.3		12	36.4	2.7	9.6		45	37.0	2.5	9.5		40	55.5	1.4	9.8		13	33.6	4.7	9.7		10	40.6	4.3
9.7		27	36.6	1.4	9.5		50	12.5	0.1	9.8		41	6.6	1.7	9.3			44.5	4.6	9.5		19	8.4	0.1
9.0		30	53.8	4.6	9.8		51	13.0	0.3	9.2		42	27.8	5.6	9.3		15	15.0	5.2	9.0		20	8.8	1.1
9.3		38	27.2	3.1	9.8		52	5.9	1.4	10		45	10.7	1.2	7.3		17	16.4	2.3	7.8		21	10.3	1.5
9.5		39	31.7	5.5	9.8			48.6	0.8	10			14.5	1.2	9.6		18	51.8	1.8	9.6			28.7	1.1
7.0		40	38.3	5.8	9.8			56.8	0.2	7.8		48	48.7	5.2	7.5		21	24.3	2.7	9.0		25	33.0	6.7
9.7		46	43.7	2.9	9.1		53	16.8	1.1	9.3		49	25.1	2.7	9.0			34.2	4.5	8.5			47.2	6.0
9.1	3	1	17.5	0.8	7.0	6	0	29.4	6.1	9.2		52	45.5	2.1	9.4		23	24.2	2.9	8.5		28	4.9	2.0
9.5		2	59.2	2.7	8.2			48.5	4.7	9.1		59	52.9	5.0	9.3			45.2	5.1	9.6			38.3	2.4
9.0		8	54.4	1.3	9.6		1	40.0	3.3	9.8	8	0	16.8	0.4	9.1		24	19.3	3.2	9.1		31	21.7	2.6
9.0		11	33.0	1.3	9.4		9	9.6	4.2	8.5		2	29.2	8.0	8.2			24.8	0.2	9.3		34	39.5	4.2
5.5			57.6	2.2	9.1		10	50.1	3.3	9.0		3	11.0	0.5	9.6			42.5	0.3	9.8		40	53.2	0.8
9.5		18	2.4	2.3	8.1		14	3.1	2.4	9.0			54.2	4.8	9.4		29	50.0	3.3	7.8		44	6.7	2.7
7.0		23	27.0	0.4	9.3			5.2	2.4	9.4		6	2.1	2.0	9.0		30	45.6	1.9	9.1			11.8	0.0
9.0		37	58.3	1.7	9.2		33	10.5	3.3	8.0			59.1	4.7	8.3		35	31.8	2.8	9.7			21.1	2.5
9.4		44	17.2	1.6	9.3		34	26.2	2.7	9.2		7	9.3	2.4	9.4			35.9	0.0	9.1			31.1	5.6
8.6		49	25.8	2.0	9.0		38	19.0	3.9	9.4		8	9.0	1.5	9.4			38.9	4.2	9.0		46	14.5	6.4
9.4		51	10.8	3.6	9.4		41	52.0	4.7	9.8		9	42.8	0.2	9.0		39	46.1	0.4	9.0		50	50.7	6.7

251—290				291—330				331—370				371—410				411—450			
m	h	m	s	m	h	m	s	m	h	m	s	m	h	m	s	m	h	m	s
9.3	11	51	6.2	9.3	14	50	36.2	9.8	17	37	32.7	7.5	18	41	26.5	8.5	19	56	45.7
9.0		52	57.6	8.7		51	49.1	8.0		41	26.7	10		43	44.4	9.5		57	3.2
9.5		53	53.1	9.1		58	26.8	9.5			49.7	9.5		44	39.9	8.3	20	0	13.7
9.8	12	1	37.0	9.5		59	22.3	9.0		48	26.8	9.4			43.8	9.3		3	34.0
9.1		8	21.7	9.5	15	2	24.7	9.2		50	31.3	8.5		45	29.3	9.8			48.2
9.8		16	3.4	9.5		3	9.7	9.3		51	59.8	9.5		48	30.9	9.3		6	35.7
8.8		17	17.2	9.8		12	33.8	9.5		52	11.0	10		49	24.4	9.7		9	21.9
9.1		22	18.5	9.6		19	43.6	7.5		53	34.3	10		50	2.4	9.2			31.0
9.4		23	59.7	9.4		21	17.1	9.5		54	6.1	8.9		51	51.8	9.7			52.5
9.0		24	56.0	9.2		31	41.7	10		56	37.9	9.1		52	14.4	9.0		17	4.9
8.8		28	17.6	8.7		36	55.5	9.5		58	24.5	9.5			30.4	9.4			20.4
7.8		31	58.4	9.5		44	11.3	9.5			25.2	8.7		53	8.0	8.7		18	29.0
8.3		34	3.2	8.5		47	33.2	8.3			57.8	9.5		54	43.4	9.1		21	16.0
8.1		35	25.2	7.2		49	12.6	10	18	0	37.8	8.0		55	30.5	9.6			16.5
9.1		36	7.6	9.5			37.0	10		1	3.9	9.5		57	10.5	9.2		23	25.1
9.6		49	40.2	9.7		51	39.9	9.3		4	31.8	8.5			17.0	9.4			28.6
7.5	13	0	50.4	10		54	4.6	9.0		5	59.8	9.5		58	4.5	9.1		26	34.8
8.5		2	31.4	9.5	16	2	4.2	9.7		7	13.8	9.4	19	3	28.6	9.8		31	44.5
8.0		7	3.1	7.0		16	43.1	9.5			33.9	8.3		4	11.2	9.5		35	35.1
7.0		12	52.5	5.0			53.1	9.5		8	1.2	9.5			44.6	9.3		49	49.7
9.5		15	59.0	7.0			53.7	9.5		9	38.8	9.5		10	16.0	9.6		52	23.3
9.2		17	27.4	8.3		32	31.1	9.4			57.0	9.8		16	29.7	9.2			38.1
8.8		24	16.5	9.6		33	30.6	9.0		10	3.8	8.0		23	43.4	9.9		55	50.3
9.7		29	16.4	9.8		43	15.2	9.0		14	47.8	9.4		25	22.1	9.1		56	29.2
9.6		32	3.1	9.5		44	6.9	9.2		16	16.6	9.5		29	51.1	8.7	21	1	37.4
9.6		35	12.9	9.0		46	16.9	8.9			21.7	9.5		30	42.9	7.7		2	9.0
9.5			31.5	9.0		48	50.4	7.0		19	18.7	8.5		31	4.6	9.5		3	33.8
9.8		39	56.8	8.0		53	23.4	9.2		20	50.2	9.0			43.1	9.0		6	51.2
9.5		45	2.9	9.8		58	28.0	9.3		22	35.7	9.9		33	32.2	9.1		13	43.5
9.0			24.1	8.5		59	48.4	9.4		23	16.2	8.8		36	36.1	9.2		15	33.6
9.0		53	14.7	9.2	17	4	38.0	9.8		26	4.4	9.8		40	13.1	8.8		17	51.8
9.2		54	9.4	9.2			53.0	9.5		29	1.4	9.4		42	12.9	4.7		18	22.8
9.8		59	34.3	9.5		6	37.4	8.5		30	8.7	9.5		45	52.7	9.6		19	55.3
8.5	14	3	56.7	9.5		9	12.4	9.5			53.2	9.3		46	0.7	9.4		25	41.9
9.8		9	10.0	9.1		12	20.0	9.5		31	0.7	9.0			6.7	9.5		26	14.1
9.5		17	30.3	7.8		17	14.9	10		32	15.2	8.3		48	1.0	9.0		27	17.1
9.7		23	51.4	8.9		22	15.6	9.8		33	10.3	9.0		50	4.3	9.6		32	15.4
9.0		40	52.5	9.3		29	20.3	10			46.3	9.3		51	25.3	9.2		38	4.7
9.0		42	9.0	9.5		36	16.2	9.5		34	12.7	8.2		52	10.7	9.5			14.3
9.0		46	38.2	9.8		37	18.0	9.4		39	25.8	9.3		55	52.0	9.5		39	1.6

451—458				459—466				467—474				475—481			
m	h	m	s	m	h	m	s	m	h	m	s	m	h	m	s
9.1	21	44	12.4	9.2	22	25	47.6	7.1	22	56	24.4	9.1	23	23	3.0
9.6		52	12.4	9.5		30	33.5	9.1		58	42.5	7.5		39	54.5
9.5		54	30.2	8.8		34	47.8	8.2		59	17.0	9.0		41	56.6
9.4	22	0	52.0	9.4		41	27.1	9.7	23	1	26.1	9.1		42	4.6
9.6		8	49.4	9.4		43	42.2	9.1		4	5.4	8.0			55.4
7.2		10	9.5	9.3		45	49.8	8.8		7	59.1	9.6		43	9.7
9.8		15	50.8	8.3		53	4.7	8.9		13	3.9	9.8		47	12.9
9.1		24	7.7	9.1		55	32.9	9.2		15	10.6				

338: im dreispaltigen Nebel GC 4355

Fehlerverzeichniss zu Band 3, Zone −1°.

−1° 92 Decl. statt 58:6 lies 56:5; auch in Band 6 statt −1° 58′ 31″5 zu lesen −1° 56′ 31″3.
164 Decl. statt 15:4 lies 13:4.
179 hinzuzufügen L.
180 Buchstabe L zu streichen.
260 statt L lies K.
280 Grösse statt 9.0 lies 9.5.
360 hinzuzufügen K.
363 statt L lies K.
524 AR. statt 36ᵐ 44:7 lies 37ᵐ 4:3.
801 Decl. statt 6:0 lies 4:0; auch in Band 6 statt −1° 6′ 3″1 zu lesen −1° 4′ 3″0.
802 Decl. statt 7:0 lies 5:0.
804 Decl. statt 8:5 lies 5:5.
813 Grösse statt 8.8 lies 9.1.
1044 zu streichen, wenn auch möglicherweise hier ein schwacher Stern steht.
1137 Grösse statt 3.3 lies 8.3.
1447 statt K lies B.
1503 zu streichen.
1655 zu streichen, oder = −2° 2049.
1841 AR. statt 27:4 lies 32:4.
1856 zu streichen.
2057 AR. statt 25:8 lies 30:8.
2084 hinzuzufügen K (nämlich BZ. 63 8ʰ 26ᵐ 38:54 um +1° 30′ zu corrigiren).
2593 Decl. statt 8:8 lies 6:8.
2594 hinzuzufügen K (nämlich BZ. 68 11ʰ 46ᵐ 38:42 um + 1° zu corrigiren).
2689 Decl. statt 56:1 lies 46:1.
2774 nach diesem Stern ist einzuschalten 9ᵐ5 13ʰ 0ᵐ 28:6 3:0.
2870 Decl. statt 25:8 lies 24:8.
2956 statt L lies K oder B.
3047 statt K lies L.
3080 hinzuzufügen L.
3080 nach diesem Stern ist einzuschalten 9ᵐ5 15ʰ 33ᵐ 23:7 19:1.
3201 statt K lies B.
3218 Grösse statt 9.4 lies 9ᵐ4.
3294 AR. statt 59ᵐ 59:8 lies 58ᵐ 59:8.
3457 Grösse statt 9.5 lies 9.4.
3464 AR. statt 48:3 lies 47:3.
3540 Decl. statt 17:7 lies 21:3.
3664 zu streichen.
3771 zu streichen.
3913 Buchstabe B zu streichen.

—1° 3934 nach diesem Stern ist einzuschalten $9^{m}.4$ $20^{h}\,8^{m}\,55^{s}.7$ 7″.4 B.
4068 Position statt $45^{m}\,41^{s}.0$ 47″.3 zu lesen $45^{m}\,31^{s}.0$ 47″.8 B.
4185 Position statt $31^{m}\,14^{s}.0$ 19″.8 zu lesen $31^{m}\,17^{s}.1$ 20″.5 B.
4186 Position statt $31^{m}\,14^{s}.0$ 30″.0 zu lesen $31^{m}\,13^{s}.0$ 29″.8 B.
4187 zu streichen.
4199 zu streichen.
4233 nach diesem Sterne ist einzuschalten $9^{m}.5$ $21^{h}\,54^{m}\,26^{s}.5$ 44″.8.
4292 AR. statt $13^{s}.0$ lies $18^{s}.0$.
4320 Grösse statt 9.0 lies 9.5.
4332, 4333 derselbe Stern; im Mittel $9^{m}.1$ $22^{h}\,31^{m}\,22^{s}.7$ 1″.7.
4345 nach diesem Sterne ist einzuschalten $9^{m}.5$ $22^{h}\,37^{m}\,53^{s}.2$ 38″.0.
4380 Grösse statt $9^{m}.2$ lies $9^{m}.1$; der Buchstabe B ist zu streichen.
4475 Buchstabe B zu streichen.

Ferner ist bei den Nummern 245, 257, 783, 867, 1230, 1712, 1889, 2178, 2707 und 4437 der Buchstabe B zu streichen, da die Sterne nur in Rectascension beobachtet und deshalb von Argelander mit Ausnahme von Nr. 1712 nicht in den Catalog des sechsten Bandes aufgenommen sind. Bei Nr. 1712 ist in Band 6 die Declinationsminute 59 statt 60 zu lesen und überdies die Declination als nur geschätzt zu bezeichnen.

Berichtigungen zu Band 8.

Seite [17] Zeile 13 statt 1885 lies 1883.
25 Zone — 3° Nr. 1040 statt L ist eigentlich B zu lesen. Argelander hat nämlich 1864 Jan. 4 den Stern vollständig und gut beobachtet: $8^{m}.8$ $5^{h}\,5^{m}\,53^{s}.04$ —3° 8′ 17″.9. Derselbe fehlt aber in Band 6, anscheinend nur aus Versehen.
42 — 4° 30 statt Sj lies B.
150 — 9° 743 Decl. statt 45″.2 lies 54″.2.
257 —14° 133 Decl. statt 32″.1 lies 33″.1.
278 unterm Text statt 1882.90 lies 1882.81 (zweimal).
284 —15° 1427 Decl. statt 26″.9 lies 25″.9.
285 1602 statt A lies B.
364 —18° 4706 Decl. statt 52″.8 lies 53″.2.
409 —20° 4946 hinzuzufügen WZ.
419 —21° 957 Grösse statt $8^{m}.9$ lies $8^{m}.8$ (mit Berücksichtigung neuerer Beobachtungen).

Zone —2°

1—40				41—80				81—120				121—160				161—200			
	0h		—2°		0h		—2°		0h		—2°		0h		—2°		1h		—2°	
m	m	s	′		m	m	s	″	m	m	s	″	m	m	s	″	m	m	s	″	
9.3	0	0.1	11.8	K	10	14	5.4	17.6	8.9	30	47.9	30.6	9.6	46	46.9	50.5	9.0	0	1.1	16.8	M
9.5		19.7	59.5		9.7		9.5	43.3	10	31	3.7	52.4	9.4		51.1	35.6	9.5		25.8	43.2	
8.9		20.3	8.7	K	9.4		9.5	50.9	9.2		47.6	18.9	M	9.0	47	24.9	20.6	WC	9.8		34.7	6.8	
10		36.3	24.8		9.5	15	27.4	21.6	8.2		54.3	45.8	K	8.6		49.3	17.1	K	9.2		45.9	28.0	
10	1	34.3	44.8		9.3		53.2	22.1	9.6	32	1.9	50.0		9.8		58.2	1.8		9.2		49.1	11.2	
10		45.6	43.5		9.8		59.7	9.6	9.2		39.4	34.4		9.6	48	12.2	2.1		10	1	1.6	24.6	
10		56.3	35.0		9.8	16	0.1	3.2	8.3	33	8.0	33.9	K	9.4		19.7	53.0		8.0		8.8	50.4	K
9.5	2	22.0	58.8	B	9.4		49.7	15.7	9.9		11.0	59.6		9.5		53.1	5.2		10		28.6	56.8	
10		23.3	45.8		8.2		53.3	2.8	K	9.4		18.0	38.6		8.9	49	57.6	35.6	K	9.9	2	9.0	31.5	
8.1	3	31.3	52.6	B	9.8	17	7.9	43.5	9.8		28.5	2.4		8.9	50	22.3	47.4	K	9.0		14.5	32.2	
10		34.7	30.5		9.8		12.5	19.7	8.6		46.2	18.5	K	6.5		26.5	32.6	K	9.3		15.6	38.5	
10		46.3	59.2		9.8		20.9	21.1	9.8		49.6	57.6		8.2	51	3.2	26.4	B	9.5		32.4	58.9	
9.5		51.1	12.6		9.0		48.9	38.0	M	8.6	34	8.5	5.3	K	9.5		22.1	7.9		9.6		41.1	0.4	
10	4	0.6	51.5		9.8	18	15.5	10.1	9.2		43.0	0.4	G	8.9		44.7	52.8	K	8.5		42.2	22.0	K
9.6		13.0	57.7		9.3		29.6	16.6	9.6	35	11.7	47.7		8.8	52	11.2	6.3	K	8.0	3	49.1	2.8	B
9.1		21.8	35.4		9.5	19	6.2	26.9	10	36	11.9	29.5		7.4		39.2	47.9	K	8.5		51.3	45.7	K
9.5		22.3	22.5		8.5	20	29.8	29.0	K	10		14.7	17.0		9.0		41.9	18.3	K	9.9	4	18.1	18.0	
9.4		35.1	22.1		9.8		52.2	57.5	9.4		28.7	16.7		9.9		57.0	42.9		9.7	5	28.7	39.0	
7.0	5	14.0	2.5	K	9.3	21	34.2	20.6	9.9	37	4.5	2.4		9.7	53	9.6	36.6		9.5		36.9	14.8	
9.3	6	12.3	48.6		10		41.0	25.5	9.1		36.0	55.6	K	7.4		17.5	26.1	K	9.4		56.7	29.4	
9.9		21.5	12.4		10		51.2	35.5	9.5		36.3	3.1		9.7		22.1	13.8		8.9		57.8	37.8	K
10	7	36.6	43.7		10		51.5	44.8	9.5		46.8	20.9		9.3		33.8	21.5		9.4	6	18.7	0.2	
9.2	8	0.7	30.7		9.4	22	36.0	5.8	10	38	0.2	13.4		8.8		34.4	21.4	K	9.7		22.5	50.1	
10		23.3	20.8		10		38.1	7.3	8.9	39	5.7	17.8		8.9		44.6	29.6	K	8.3		41.6	53.0	K
9.3	9	1.8	37.4		9.5		46.6	18.7	9.0		14.0	54.7	M	9.7		59.3	43.5		8.8		51.3	57.3	Sj
8.2		11.2	19.3	L	10	23	5.9	34.4	8.5		36.0	2.7	K	9.8	54	46.9	55.4		9.5	7	4.7	28.4	
10		17.9	54.2		9.0		59.1	49.3	10		49.3	56.0		10		55.8	13.3		9.5		5.9	11.7	
9.4		35.7	55.4		9.2	24	12.1	50.6	9.5	40	26.3	14.0		8.8	55	2.2	50.5	K	9.9	8	3.0	2.9	
8.3		40.2	27.6	K	7.3		15.3	35.4	K	9.1		30.4	23.4	K	9.7		27.1	29.9		9.4		25.5	45.5	
9.6		55.8	35.4		8.8		35.4	2.2	M	8.8	41	12.0	33.3	K	9.7		35.5	53.1		10	9	10.8	51.4	
6.7	10	22.8	40.2	B	9.2	25	5.7	24.9		8.5		53.4	24.5	K	10		38.7	55.0		9.4		14.1	24.4	B
10		22.8	37.3		9.8		33.1	14.9		8.4	43	22.9	42.4	B	9.1		49.4	48.1		8.5		16.5	1.8	B
9.5		40.1	9.2		9.6		59.6	17.8		9.2		59.3	10.8		9.2		55.2	59.7		9.5		27.1	47.3	
7.3		53.0	49.3	B	9.3	26	6.2	2.2		9.1	44	4.1	4.2		8.7	56	1.4	16.1	K	9.2	10	3.2	27.7	
9.5	11	4.4	2.9		8.5	27	31.0	6.4	K	9.5		17.6	47.5		9.0		32.4	40.3		9.6	12	11.9	55.0	
9.0	12	7.6	3.9	M	8.9	28	6.3	52.1		9.3		32.3	8.0		9.4		45.2	30.7		9.4		49.7	23.2	
9.4		28.2	26.6		9.4		17.7	20.7		9.1		38.0	53.4	K	9.4		53.8	51.2		9.4	13	27.6	14.6	
10		28.7	42.6		9.7	29	17.9	42.6		8.4	45	27.4	41.1	K	10	58	7.5	19.6		7.3		28.7	4.3	K
9.3		35.4	58.4		9.5		36.1	0.3		9.2		54.8	40.4		9.0		40.6	15.3		9.5		33.8	27.2	
9.5		42.4	48.0		10	30	25.7	47.0		9.2	46	29.4	52.4		6.8	59	45.4	30.2	K	8.2	14	24.7	45.6	K

201—260					261—320					321—380					381—440					441—500				
	1ʰ		−2°			1ʰ		−2°			1ʰ—2ʰ		−2°			2ʰ		−2°			2ʰ		−2°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
10	14	34.4	2.5		9.8	30	51.2	27.5		9.5	48	43.7	17.8		9.2	6	15.3	10.1	Sj	10	27	43.2	23.0	
9.5		40.2	35.2		9.5	31	9.6	35.9		9.7		52.3	11.9		9.6		42.2	55.2		9.1		57.8	12.8	M
9.0		48.2	40.0	K	9.3		34.8	40.7		10	49	10.6	50.7		10		57.7	44.9		9.8	28	19.3	36.0	
9.5		48.7	20.2		9.5		45.8	29.9		9.8		39.9	59.0		9.2	7	15.4	51.2		8.3		28.3	27.7	
9.7	15	31.8	55.7		9.2		49.8	19.0		8.5		49.8	25.4	Sj	10		44.8	50.1		9.0		32.9	34.4	
9.5	16	11.7	23.9		9.5		52.6	3.1		9.3	50	4.4	36.5		8.5	8	5.1	36.4	K	9.8		45.8	36.1	
9.5		54.1	12.3		10	32	35.5	47.2		9.5		6.2	31.0		9.3		6.4	41.2		9.8		48.8	18.1	
9.2		56.2	29.8		9.6		45.7	11.5		8.8		15.9	50.9	K	8.9		58.6	29.0	Sj	9.8		53.8	46.5	
10		56.9	53.7		9.5		51.2	1.5		9.0		34.3	48.8	K	7.8	10	26.5	42.8	K	9.4		58.6	20.5	
9.6	17	39.3	45.0		8.3	33	3.8	20.0	B	6.7		37.2	46.0	K	9.5		34.6	10.5		9.6	29	34.3	42.6	
9.8		50.7	33.5		9.1		29.7	8.4	M	8.4	51	3.9	48.9	K	9.9		43.5	47.0		8.9		36.3	28.3	
9.4	18	20.7	31.9		9.4		45.8	30.7		9.8		32.2	50.5		9.1	11	22.2	12.2		7.2		46.8	58.1	K
7.7		43.9	57.5	K	9.5		50.3	11.5		8.8		45.8	12.6	K	8.5		36.5	24.6		9.3		57.3	35.3	
9.5		51.1	41.9		9.7	34	2.1	15.5		9.5	52	5.9	41.5		9.1		39.2	52.1		8.7	30	6.1	56.6	K
8.7	19	15.8	27.0	B	9.1		12.9	47.5		10		18.0	51.6		9.7		45.6	51.0		9.3		8.3	35.0	
9.8		21.5	54.1		9.4		34.8	3.7	M	9.4		54.0	21.7		8.4	12	26.5	53.9	K	8.0	31	2.7	2.2	K
9.7	20	2.7	36.5		9.1		41.8	32.5		9.4		54.1	16.1		9.3	13	7.7	14.2		9.5		16.3	21.4	
9.2		2.8	49.3		7.7	35	2.5	53.8	B	9.0		55.3	20.0	Sj	9.8		58.2	24.2		9.6		26.4	39.0	
10		3.1	17.0		9.4		8.2	40.0		9.3	53	33.8	34.2		9.3	15	52.7	34.2		9.6		29.0	53.1	
8.6		34.3	44.4	K	9.5	36	3.8	31.7		9.0		38.8	21.8		9.5	16	35.0	8.8	B	8.7		34.8	12.7	K
7.4		38.4	47.3	B	9.5		17.0	8.8		9.2		58.3	21.5		8.3		55.3	34.3	K	9.8		35.8	23.4	
9.2		49.2	8.4		9.5		17.9	42.5		10	54	12.9	4.7		9.8		56.7	13.4		8.0		56.8	31.9	
9.4		57.1	0.5		9.8		21.7	54.8		10		16.6	51.9		8.9		57.8	57.1		7.8		58.8	42.1	K
9.8	21	14.8	37.1		9.7		52.6	38.0		9.1	55	8.3	46.5		8.3	17	8.3	24.4	L	9.8	32	20.3	21.7	
9.5		49.7	4.8		9.3	37	12.9	37.8		8.3		17.5	19.7	Sj	8.2		15.2	40.2	Sj	10		39.0	2.5	
9.6		52.7	41.2		9.5		56.9	21.1		9.0		31.6	27.1		8.6		32.2	46.4	Sj	9.6		43.2	42.0	
10	22	50.8	30.1		9.7	38	0.9	48.3		9.0		32.1	34.9		9.8	18	9.8	49.6		10		43.5	5.7	
8.9	23	15.2	32.5	R	9.0		9.6	58.0	Sj	9.2	56	20.7	55.2		8.8	19	6.0	55.9		9.5	33	10.4	30.2	
9.5		37.8	44.3		9.4		19.8	52.2		10		28.2	45.9		9.3		8.1	11.2		8.3		20.2	32.9	Sj
9.5	24	8.5	17.7		9.9		22.7	47.0		10		28.5	42.5		9.8		24.2	25.2		9.6		32.9	41.1	
9.3		10.1	20.0		7.8		27.6	39.3	L	8.7		36.9	45.0	K	9.8		34.2	31.6		9.4		41.2	11.3	
9.6		14.0	12.6		9.2		46.2	13.1		9.4		45.3	6.0		8.3	20	10.7	35.8		9.3		53.4	30.0	
9.5		24.1	26.6		9.3		46.4	7.2		9.3		48.8	22.5		8.7		15.6	40.2	Sj	9.2	34	1.6	21.6	
9.1	25	14.1	46.9		10	39	21.1	56.2		9.1	57	12.0	47.0		9.8		30.6	2.9		9.6		34.9	40.3	
9.4		18.7	23.7		9.6	40	29.2	33.1		9.7		16.8	40.3		9.8	21	25.8	37.6		9.3		40.3	11.5	
9.0		20.2	23.9	K	9.3		41.7	32.6		9.0		42.3	40.5		9.2		30.2	15.1	M	9.0		57.9	58.3	K
9.4		43.7	8.7		9.7	41	15.6	57.8		8.3		42.6	44.4	Sj	9.2		40.2	27.6		10	35	33.4	38.9	
8.8		45.3	32.2	B	8.3		16.2	15.2	Sj	9.4		51.9	31.8		10	22	15.4	59.9		9.3	36	28.8	4.1	
9.5		58.3	37.5		8.9		23.2	8.8	S	9.5	58	54.9	24.4		8.3		22.5	55.2	Sj	9.8		57.9	31.8	
9.3		58.9	48.6		9.0		23.9	9.2		8.4	59	6.1	55.7	Sj	9.3		29.8	27.7		8.3	37	19.9	34.7	K
10		59.5	44.8		9.5		53.7	14.0		8.8		26.9	37.4	K	9.8		45.0	52.2		9.8		21.8	27.7	
8.3	26	14.8	36.7	K	9.7	42	5.6	58.2		7.9		34.4	30.8	K	8.9		55.3	36.3	Sj	9.2		53.4	38.4	
8.9		16.0	22.6		9.7		6.4	50.3		9.5		41.5	15.3		7.8	23	11.3	18.6	K	9.2	39	14.9	16.3	
9.5		31.2	31.6	WC	10		24.6	7.3		9.1		54.7	49.8		9.3		13.8	58.6		9.5		19.8	13.6	
8.4		34.2	54.5	K	9.1		47.8	37.3		9.4	0	31.7	58.8		9.3		15.2	52.1		9.2		26.3	15.0	M
9.6		37.6	50.5		8.2	43	15.7	47.0	K	9.1		39.4	59.2	Sj	8.9		22.3	45.8		9.7		46.9	18.6	
9.1		38.3	25.9		9.5	44	13.4	13.7		9.5		41.1	45.3		9.2		37.5	49.7		9.4	40	7.3	14.5	
9.5		38.5	13.7		9.4		44.7	31.5		10		51.0	47.4		9.5		44.3	5.7		9.4		50.5	49.8	
9.5		57.7	46.6		8.6	45	12.8	44.7	K	9.3		56.3	24.5		9.3	24	25.2	35.4		10	41	16.4	39.4	
7.5	27	24.8	46.4	K	8.7		24.2	5.6	K	9.3	1	48.9	39.2		9.2		28.2	30.9		9.2		19.4	36.1	
8.9		28.1	51.2	K	7.3		44.7	2.0	K	9.4	2	8.0	23.2		9.8		37.7	34.4		8.3		30.0	7.2	Sj
9.8		53.8	32.5		8.5		47.8	14.3		9.3		13.3	21.2		8.3	25	16.6	39.6	Sj	10		36.3	55.2	
8.6	28	28.4	8.7	M	8.9		51.2	53.7	K	8.9	3	39.0	36.3		8.3		20.2	23.7	K	9.8		38.8	15.0	
9.3	29	49.0	58.0		8.8	46	23.7	4.0	Sj	8.9		59.9	15.5	Sj	9.5		31.3	21.5		10		45.4	39.5	
8.7	30	0.9	55.7		9.7		29.5	49.0		6.3	4	14.4	30.5	K	9.3		37.1	3.0		10		53.9	37.5	
10		15.0	39.4		8.7	47	28.7	12.4	L	9.5		16.6	17.1	M	9.8	26	6.3	42.1		9.6		55.1	33.0	
9.5		22.2	1.7		9.0		36.3	38.4		8.6		17.4	42.4	K	9.8		20.7	23.7		9.3	42	17.8	33.5	
9.5		27.7	13.8		9.5		45.8	46.6		9.1		20.4	23.5		9.2		22.8	27.4		9.0		53.1	33.9	
8.5		28.0	2.6	K	9.8	48	8.2	46.3		7.9	5	20.4	54.4	K	8.9		35.4	51.0		9.5	43	3.9	16.4	
8.8		50.3	30.1	B	9.4		19.8	50.1		9.7		57.6	42.3		9.5		59.7	21.9		9.5		11.9	37.4	

311: 44°90 1′53″2 B_0, Ep. 1872.53

501—560

	2h—3h		—2°	
m	m	s	′	
9.7	43	21.8	18.9	
10	44	8.8	59.2	
10		9.2	40.8	
9.3		37.9	23.2	
9.4		45.5	36.6	
9.3		57.7	19.5	
9.7	45	10.3	9.8	
9.8		57.1	41.4	
10	46	9.7	28.3	
9.4		11.4	26.8	
7.8		13.9	14.0	K
9.5		15.7	16.3	
8.8		19.8	3.5	Sj
9.8		28.5	37.4	
9.0		30.0	46.2	K
9.1		42.9	4.3	M
8.3	47	33.5	54.5	Sj
10		49.0	42.7	
9.8	48	38.9	9.0	
9.0		59.5	56.4	
8.9	49	34.9	9.6	Sj
8.8		40.5	21.5	K
9.5	50	12.4	31.5	
9.3		18.9	35.0	
9.8		39.4	9.6	
7.9		39.7	55.1	K
9.2		47.0	19.3	
9.7		52.4	9.2	
8.5	51	2.4	9.7	M
9.5	52	25.0	41.5	
9.2		27.4	6.9	
7.8		42.4	23.0	K
9.7	53	17.0	31.0	
9.5		30.5	5.9	
9.5		41.5	22.0	
10	54	9.1	11.4	
9.8	55	23.0	26.8	
7.3		40.3	39.6	K
9.7		47.9	49.7	
9.0		58.9	46.4	
9.9	56	26.3	59.6	
9.3		45.5	3.6	
8.9	57	9.3	43.9	K
9.2		22.3	31.6	
9.3		27.2	2.1	
9.3		54.1	29.9	
9.1	58	17.3	56.6	
9.8		17.8	26.5	
9.8		25.8	15.1	
9.8	59	12.1	37.0	
9.1		17.0	13.4	M
8.5		24.0	9.1	K
9.2		24.8	21.9	K
6.8		52.1	21.7	Sj
8.5	0	19.6	12.5	K
9.1		47.5	22.8	
9.4	1	7.0	11.6	
9.5		10.5	7.1	
9.7		43.5	2.6	
9.7		48.4	29.3	

561—620

	3h		—2°	
m	m	s	′	
9.7	2	45.4	19.6	
9.8		48.2	4.0	
7.7		57.2	14.7	Sj
9.8		57.7	54.5	
9.8	3	8.3	17.4	
9.8		14.4	44.4	
9.8		41.9	2.9	
9.5		47.6	42.2	
9.0	4	0.1	39.0	
9.8		18.7	5.3	
9.1		44.5	54.6	K
8.5		45.3	59.5	Sj
9.0	5	28.4	42.0	Sj
9.8		32.9	24.4	
9.8		39.3	8.8	
9.5		44.9	27.2	
9.8		53.8	10.4	
9.8	6	9.2	47.6	
9.8	7	6.8	36.9	
9.4		15.9	45.7	
7.2		17.1	52.3	Sj
9.5		52.0	7.0	
8.7	8	5.6	43.0	Sj
9.8		7.4	14.4	
9.8		27.8	40.8	
9.1		40.9	23.1	
8.9		48.5	36.2	
9.8		51.6	2.8	
9.3		57.7	52.7	
9.8	9	8.1	38.9	
10		16.7	1.2	
9.4		31.2	0.5	
9.8	10	1.6	3.7	
9.2		28.5	23.0	
9.8		44.3	45.8	
10		46.6	26.8	
9.5		58.9	5.0	
8.8	11	11.2	9.0	K
9.6		40.7	39.5	
9.5		41.9	31.9	
9.3		54.8	56.3	
9.5	12	11.6	31.5	
8.7		23.6	35.7	Sj
7.7		41.5	7.2	K
9.2		44.5	4.7	M
9.1		48.5	3.8	K
8.3	13	6.0	16.9	L
9.8		33.6	19.2	
9.2	14	34.3	35.2	
9.7		58.2	53.5	
8.5	15	31.8	34.5	
8.3		51.0	0.6	K
9.5	16	13.3	44.2	
9.8		29.1	7.0	
8.5		35.6	58.5	K
9.8		45.2	16.2	
9.5		53.7	23.5	
8.7	17	38.2	50.5	
8.6		51.9	14.3	K
9.4	18	1.3	30.0	

621—680

	3h		—2°	
m	m	s	′	
8.9	18	34.9	0.2	M
9.6		57.5	50.0	
8.9	19	1.0	39.1	
9.4		1.5	5.4	
9.6		5.4	41.4	
10		6.1	6.9	
8.8		7.1	18.8	
9.8		8.7	22.6	
9.3		26.8	30.9	
9.1		28.6	54.2	
9.8	20	34.1	6.7	
9.6		37.7	17.7	
8.0		50.0	59.4	K
9.5		50.9	39.4	
8.9		56.8	21.7	Sj
8.9	21	17.9	48.5	Sj
9.4		25.7	55.4	
10	22	4.0	41.2	
9.5		12.3	57.7	
8.6		15.7	14.7	K
9.8		17.6	25.3	
9.3	23	21.8	26.5	
8.9		24.8	29.6	
9.0		25.7	16.7	Sj
9.8		39.2	15.4	
8.8		39.5	58.4	
9.4		40.7	37.2	
8.6		46.5	45.2	Sj
8.9	24	59.2	11.1	M
9.6	25	5.6	46.3	
8.3		21.2	9.4	M
7.5		52.3	21.1	K
9.8		55.6	3.9	
9.1	26	3.5	0.1	
9.0		40.8	45.1	Sj
9.0		42.2	38.9	K
9.8	27	19.4	53.9	
9.0		22.8	47.5	
9.8		29.5	53.5	
9.6		31.7	15.0	
9.4		35.0	27.5	
9.7		35.2	54.8	
9.8		38.2	46.5	
9.4	28	20.3	35.3	
9.8		25.1	14.5	
9.8		36.9	38.0	
9.0		44.2	50.8	Sj
8.7	29	0.0	3.4	K
9.5		9.1	1.1	M
9.4		34.6	2.3	
9.8	30	6.6	7.5	
9.7		8.9	40.0	
9.8		38.4	36.3	
9.7		52.0	46.4	
8.7		56.2	13.1	K
9.0	31	3.9	22.7	
8.7		4.6	2.7	K
9.8		5.3	58.7	
7.8		14.4	33.7	B
9.2		20.7	19.2	

681—740

	3h		—2°	
m	m	s	′	
7.7	31	33.0	0.0	K
9.8		50.2	24.0	
7.8	32	23.5	4.0	K
8.3		31.2	23.4	K
9.9		36.3	28.8	
8.0		50.7	22.1	K
9.8	33	7.5	3.4	
9.8		9.2	57.5	
9.3		16.5	41.4	
7.5		25.5	47.9	K
9.0		35.1	8.0	M
9.0		37.4	36.6	
8.8		42.9	39.7	
9.6		59.8	24.7	
9.3	34	2.0	53.0	
9.6		28.4	45.3	
10		33.4	40.6	
9.8	35	9.3	19.1	
9.1		13.5	43.2	K
9.0		28.2	49.8	K
9.8		45.4	41.2	
7.5	36	2.8	31.8	Sj
7.8		16.8	32.2	K
9.3		27.6	48.6	
9.8		35.6	9.0	
10		42.4	35.4	
8.3		45.3	25.9	Sj
9.5	37	8.9	29.5	
9.8		18.3	20.4	
9.6		41.0	50.0	
9.3	38	1.2	15.0	
9.8		13.1	50.6	
9.6		28.4	29.6	
9.1	39	5.2	10.6	M
9.8		36.1	51.9	
9.5		39.2	11.5	
8.8	40	8.8	45.3	K
9.7		11.3	19.6	
9.7		14.2	48.6	
9.5		14.2	39.9	
8.3	41	8.3	35.0	
9.1		12.4	31.0	
7.8		26.7	52.7	K
9.8		30.4	28.5	
9.5	42	6.9	35.9	
7.3		20.3	46.5	K
9.8		23.1	57.6	
9.7		32.7	22.9	
9.8		34.3	51.9	
8.8		41.3	44.2	K
9.1		44.8	25.3	
9.6	43	11.2	13.2	
10		17.6	48.9	
9.8		35.1	57.4	
9.2		35.9	49.6	K
9.8		59.8	32.5	
8.9	44	9.2	24.7	
8.8		17.6	51.5	K
8.3		40.2	3.9	L
9.5		53.4	43.7	

741—800

	3h		—2°	
m	m	s	′	
10	45	8.2	23.8	
8.8		19.1	45.9	
9.5		29.5	54.1	
9.8		46.3	28.2	
9.0		48.0	16.4	L
9.4		49.2	16.5	
8.0		51.8	25.8	K
9.4	46	1.3	28.9	
9.5		51.7	25.0	
10	47	7.1	41.5	
10		39.1	45.7	
9.4		42.7	25.9	
9.4		50.3	56.1	
9.0		59.9	9.5	K
9.8	48	10.5	35.7	
10		16.0	27.0	
10		32.6	18.7	
9.6	49	0.2	44.6	
9.5		10.4	58.7	
9.2		41.4	57.8	
9.9		51.9	51.8	
9.2		58.0	0.2	
9.8	50	15.9	52.0	
8.8		16.7	24.0	Sj
9.1		25.4	44.4	
10		41.1	46.6	
9.8		56.2	42.1	
9.5	51	7.0	37.9	
10		30.4	12.9	
8.5	52	5.0	9.3	
9.8		6.1	20.8	
10		29.5	34.0	
10	53	46.0	55.0	
9.4		53.1	27.7	
9.2	54	18.9	38.1	
9.5		29.7	16.5	
8.0		56.8	2.4	Sj
9.8	55	5.2	43.2	
10		14.6	12.0	
9.9		34.0	8.2	
9.1		58.4	58.9	
8.2	56	0.3	46.2	K
9.0		5.5	53.9	K
9.2		7.0	7.9	
9.3		10.8	19.7	
9.0		29.4	24.2	
9.1		41.0	27.1	
9.4		41.8	3.0	
9.5	57	7.5	8.3	
9.5		9.4	7.9	
9.6		11.4	47.1	
9.5		12.5	38.5	
9.3		12.8	26.7	
9.7		28.2	54.7	
9.5		28.2	42.8	
9.2		30.9	22.6	
9.2		35.5	22.8	
6.8		35.6	49.7	L
9.0		50.1	10.3	Sj
8.6		50.7	17.5	

592 = —1° 468 612 = —1° 481 621 = —1° 491 654 = —1° 510
681 = —1° 516 : 33:45 0′5:3 B_4, Ep. 1872.10 690 : 25:75 47′47:4 B_4, Ep. 1872.10 762 = —1° 563

801—860				861—920				921—980				981—1040				1041—1100			
	3h—4h	−2°			4h	−2°			4h	−2°			4h	−2°			4h	−2°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.6	58 12.1	40.8		9.9	11 56.0	35.6		9.8	22 58.9	45.3		10	33 31.8	7.2		9.8	44 8.7	50.5	
9.7	12.4	48.8		9.6	12 0.4	33.6		9.9	23 15.0	48.7		8.0	38.0	14.1	K	9.2	26.4	58.4	
9.3	18.6	29.1		9.0	2.5	5.0	K	8.3	15.5	32.8	B	8.9	40.8	58.5		9.2	35.5	11.5	
9.7	27.6	54.1		8.7	27.8	49.0	Sj	10	19.7	50.4		9.8	49.7	37.5		9.4	36.3	46.2	
9.5	40.0	49.7		9.2	29.7	13.0		9.8	26.6	43.4		9.0	34 19.8	44.0	K	10	44.4	41.0	
9.9	59 11.8	17.2		9.1	47.4	1.4	G	9.7	58.0	20.5		10	21.8	10.4		10	45.3	46.4	
8.5	23.3	18.2	K	6.7	57.7	59.0	K	9.7	24 13.1	14.9		9.8	23.1	45.8		9.3	47.6	13.5	
9.7	24.2	17.1		9.2	58.9	18.8		9.7	28.4	51.2		8.5	24.8	25.3		9.8	51.8	36.1	
9.7	31.6	55.2		9.1	13 8.0	19.7	K	8.9	39.5	14.0		9.8	41.6	18.2		8.6	45 0.5	51.6	K
9.8	49.5	25.2		9.2	14.8	45.9		8.7	46.2	17.4	K	9.5	35 12.3	24.4		9.5	24.1	16.0	
9.8	50.8	24.6		9.1	16.5	4.0	M	9.6	25 14.2	59.4		10	18.2	40.5		10	33.3	6.8	
9.4	51.6	30.2		9.8	19.3	41.8		9.7	18.6	44.2		8.8	39.1	56.5	K	9.0	56.7	0.3	K
9.4	54.3	31.7		9.0	21.5	5.2	M	9.6	40.5	59.4		10	43.9	27.5		8.3	46 1.5	50.8	B
8.2	0 3.9	45.9	Sj	9.0	41.4	18.3	K	10	53.4	5.7		9.7	59.8	58.3		8.7	13.0	0.7	K
10	16.6	28.2		9.7	44.6	57.8		9.9	59.4	33.0		9.3	36 3.2	37.4		9.9	13.3	57.0	
9.0	22.2	0.7	K	9.4	53.2	9.4		9.8	26 11.9	54.9		9.1	22.8	23.5		9.5	27.5	9.7	
9.3	29.8	55.7		10	14 27.1	55.0		9.7	18.7	39.8		9.5	32.3	7.3		9.2	37.3	29.5	
9.6	33.2	0.0		9.4	33.0	22.0		7.7	19.3	8.2	K	9.0	34.5	52.5	K	10	49.1	38.1	
9.8	1 42.1	40.6		10	46.3	27.1		8.9	26.0	45.6	K	9.5	36.1	59.1		10	47 7.6	47.6	
8.5	2 15.3	4.0	K	9.5	15 4.0	20.5		9.7	27.1	16.9		9.0	53.7	18.9		9.0	8.5	9.6	K
9.8	41.3	18.0		9.8	4.3	46.2		9.7	34.8	59.8		10	37 8.5	25.8		8.3	16.5	2.2	K
9.4	54.0	39.6		9.4	12.1	39.7		8.1	27 16.2	23.1	K	9.9	32.4	39.8		9.5	38.1	30.4	
9.7	3 16.4	34.8		8.3	24.4	35.1		9.6	16.7	4.0		9.9	37.1	36.3		8.8	47.7	50.3	K
9.8	17.9	23.1		8.5	25.8	15.8		8.5	30.0	9.4	K	8.7	38 3.4	56.6		9.4	51.1	57.8	
9.8	32.5	8.4		9.3	31.5	41.5		9.0	36.9	59.1		10	3.7	18.4		9.6	58.7	54.4	
8.6	37.4	52.4		9.3	57.9	40.0		9.8	28 1.0	13.2		9.4	20.8	20.6		10	48 2.8	23.0	
10	4 0.5	42.3		8.8	16 12.8	49.7		9.8	15.1	17.6		9.4	39.2	44.3		9.6	5.0	27.1	
10	15.9	6.1		9.8	37.0	21.3		9.8	18.8	54.6		10	50.7	0.8		9.5	14.3	50.5	
10	5 4.0	21.7		9.8	47.7	16.0		9.5	36.7	57.6		9.0	39 8.5	20.2		8.3	27.7	34.4	L
9.8	9.4	50.7		10	49.3	42.8		10	37.5	42.2		9.1	11.0	28.5		8.5	59.9	6.5	M
10	9.5	28.2		9.0	17 4.9	52.4	K	9.2	39.9	54.8		9.4	41.3	9.4		10	49 10.1	49.6	
7.6	15.2	53.6	K	9.6	28.2	24.3		8.0	43.6	31.5	K	9.4	45.9	54.8		9.2	12.4	24.8	
9.8	34.3	16.6		9.2	30.5	50.4		9.4	52.6	9.1		9.8	49.5	20.4		9.8	27.1	57.5	
9.0	42.3	17.5	K	9.4	45.3	44.3		9.5	59.8	5.6		9.6	52.8	43.0		9.2	35.4	57.0	
9.2	45.2	56.8		9.5	48.0	35.7		10	29 19.6	53.3		9.8	40 20.0	49.5		9.1	36.2	57.5	
9.5	47.4	35.4		9.9	18 1.2	23.3		9.4	23.0	22.5		9.0	27.8	50.7		9.8	40.4	46.0	
9.9	48.7	14.1		9.6	4.0	19.5		10	35.4	58.9		9.5	33.6	9.9		9.4	50 47.3	41.9	
10	50.0	50.5		9.7	9.7	11.3		10	50.8	3.8		10	44.4	7.8		10	47.5	39.7	
9.9	6 0.0	30.7		7.3	22.9	34.1	K	9.6	30 0.7	39.8		9.4	41 0.3	49.0		9.8	48.9	6.0	
9.5	42.1	57.7		9.8	26.2	10.1		9.8	7.7	31.9		9.7	2.6	13.9		6.3	52.1	26.3	Sj
8.7	7 1.7	52.4	K	10	31.5	44.2		8.7	14.3	50.0	K	8.6	4.1	7.3	K	10	51 12.9	10.8	
9.3	3.2	28.1		9.5	44.9	17.5		9.3	17.0	57.3		9.8	6.0	24.4		9.3	41.1	12.7	
9.4	16.1	9.0		8.5	19 28.4	3.4	L	5.1	18.6	45.9	K	9.9	13.0	0.3		7.8	47.3	21.7	K
7.8	18.8	30.4		8.5	37.2	29.6		7.2	26.0	56.5	K	9.5	15.2	24.6		9.4	56.6	39.7	
10	8 16.4	46.7		8.6	20 6.0	20.9	K	9.8	27.9	45.9		8.7	28.4	53.9	K	9.9	58.9	42.9	
9.9	41.3	3.9		10	31.9	38.2		8.7	32.1	59.9	K	9.7	50.1	55.3		9.8	52 3.0	27.5	
9.3	9 4.0	59.0		9.9	34.2	26.2		9.2	39.3	52.9		10	42 2.2	1.2		9.5	7.4	21.4	
8.2	17.6	44.5	K	9.2	59.8	46.2		9.8	40.0	15.2		9.1	8.2	46.9		8.8	10.7	17.1	K
10	18.9	21.0		10	21 1.5	19.6		9.4	31 3.5	14.2		9.3	13.8	22.3		10	28.6	42.3	
9.4	22.0	39.4		9.8	13.1	36.8		9.9	37.2	38.7		9.5	16.7	1.5		10	28.7	45.9	
9.7	30.9	59.0		10	34.7	56.0		9.4	52.5	48.5		10	28.7	52.3		10	37.5	43.4	
9.2	33.5	38.3	K	9.7	43.8	38.2		9.5	56.5	13.2		8.2	37.9	43.9	K	8.7	45.8	59.4	
8.9	59.5	37.8	K	9.6	48.9	12.7		10	32 3.9	27.8		10	39.0	8.8		9.9	51.2	35.6	
9.5	10 6.3	27.4		9.1	57.4	41.4	K	10	29.7	20.7		10	51.8	37.4		8.3	57.0	9.4	K
8.8	21.1	12.4	K	7.9	22 8.7	44.3	K	9.3	36.1	36.7		10	43 1.4	6.9		6.5	53 20.8	16.8	Sj
9.2	22.1	59.6		9.7	13.5	2.2		9.6	47.9	10.4		10	46.2	4.2		9.9	31.3	36.2	
9.8	49.9	2.4		9.5	13.9	40.3		9.7	33 1.6	50.2		9.9	51.2	57.1		9.3	35.4	7.1	
8.5	11 1.3	45.6	K	9.1	27.1	48.1		10	7.0	15.9		10	54.3	5.3		9.2	37.0	38.2	K
9.3	12.7	59.8		9.8	41.2	51.5		9.5	22.5	12.6		9.8	44 1.4	24.5		10	45.1	41.2	
9.5	20.6	41.5		8.5	42.6	39.6	K	10	29.6	50.0		9.8	7.8	5.7		9.4	45.7	42.5	

816 = −1° 588 866 = −1° 618 916 = −1° 651 1023 = −1° 728 1052 = −1° 745

1101—1160				1161—1220				1221—1280				1281—1340				1341—1400			
4h—5h		—2°		5h		—2°		5h		—2°		5h		—2°		5h		—2°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
10	53 54.6	38.4		7.0	3 40.0	25.6	K	9.0	14 5.5	48.5	Sj	9.5	24 26.9	21.9		9.1	33 40.1	55.3	K
9.5	57.4	34.6		9.7	42.3	9.1		8.0	20.6	11.4	S	9.5	54.5	4.0		9.5	41.5	49.1	
9.5	54 20.3	2.4		9.5	49.6	53.3		9.5	42.2	33.8		9.5	25 15.4	0.0		8.5	45.8	22.2	Sj
8.0	22.1	56.1	K	9.5	49.8	5.5		9.2	46.4	44.5		10	16.0	34.1		8.5	47.3	47.7	
9.6	55 11.7	10.3		6.0	4 1.3	40.4	K	8.5	15 38.8	17.6		9.0	23.6	8.4	K	8.5	34 21.5	19.7	Sj
9.4	29.8	0.0		9.0	17.5	2.9	K	9.0	43.6	7.3		9.0	33.8	17.7		7.5	24.3	58.7	Sj
9.4	47.9	40.9		9.5	20.9	21.7		9.5	45.1	29.2		9.3	50.5	2.6	M	10	34.3	34.5	
9.2	56 7.2	12.9		9.5	59.2	35.0		9.5	49.6	52.9		9.7	51.8	47.1		8.7	37.3	52.7	K
9.2	16.8	38.0		9.2	5 1.9	22.5		9.4	16 2.6	8.7		10	55.3	47.4		9.3	35 10.3	59.2	
9.0	23.5	44.2	K	9.5	3.9	23.4		9.0	5.0	24.3		9.4	26 3.0	24.1		8.5	42.2	22.7	
7.0	26.1	45.1	Sj	9.5	4.6	8.2		9.3	14.1	29.2		9.5	7.6	7.5		9.0	55.3	35.2	
9.9	39.5	49.7		9.5	7.4	46.2		9.0	17.7	56.4	Sj	9.4	47.2	46.8		9.7	36 7.3	13.3	
9.5	40.8	37.9		9.5	11.3	40.4		9.6	17 0.6	57.2		9.8	48.9	21.8		9.7	38.4	45.0	
9.8	49.5	50.1		9.5	35.7	59.9		9.5	11.3	13.0		8.2	50.5	0.7	K	9.2	47.3	32.9	
9.5	51.9	6.3		9.8	6 6.8	48.3		3.7	12.1	31.9	L	9.2	56.8	15.2		9.0	49.1	7.9	
9.4	57 2.0	28.6		9.2	9.5	47.9		9.5	18.0	20.9		7.8	59.5	59.2		9.0	52.3	33.8	
8.8	5.0	53.3		9.5	14.0	39.9		8.0	23.3	38.2	L	8.5	27 0.4	29.3		8.8	59.2	24.4	Sj
9.5	16.2	34.1		9.5	14.4	1.9		9.2	35.7	56.4		9.5	23.0	39.0		8.5	37 12.5	58.3	
9.5	19.8	2.3		9.3	16.7	58.2		9.5	36.1	33.3		9.5	25.9	35.0		9.5	16.3	32.4	
9.3	36.7	48.1		9.5	20.0	30.9		9.8	42.4	45.7		9.5	38.6	1.1		9.5	18.2	19.5	
10	45.1	10.5		8.5	29.7	57.2		8.0	44.7	56.8	Sj	10	47.0	44.9		9.6	42.7	37.9	
9.7	56.9	52.5		9.0	36.6	9.4		8.5	51.2	35.0		9.5	52.8	19.0		10	44.0	29.0	
10	58 0.8	36.6		9.5	43.5	48.7		9.5	18 1.8	18.9		9.0	55.6	0.7	Sj	8.8	44.4	33.8	
9.7	8.7	51.7		10	49.7	59.0		9.3	4.4	44.8		10	56.7	14.1		9.5	57.3	23.0	
9.5	13.5	48.2		9.5	56.0	28.6		8.5	24.6	10.0	K	9.0	57.9	28.8	K	9.5	38 2.2	21.4	
9.1	15.1	12.2		9.5	57.7	58.1		9.0	39.0	27.8	K	9.5	28 19.0	33.2		9.0	3.4	48.6	
9.0	20.3	48.1		9.5	7 7.2	35.3		9.1	52.0	24.7	K	8.5	27.9	27.9	K	9.5	50.3	25.4	
9.6	22.8	54.0		9.0	23.0	26.4		9.5	19 20.2	33.7		9.8	45.0	16.1		9.8	53.4	31.4	
9.9	23.6	44.6		10	34.0	21.2		9.8	22.9	16.8		8.8	56.8	21.6	K	9.5	39 13.1	5.5	
8.6	33.6	0.3	K	9.5	41.3	39.8		7.5	41.1	29.1	K	10	29 8.3	2.6		9.3	44.4	48.5	
9.3	58.1	57.0		10	8 7.0	38.4		9.5	56.3	38.5	K	8.5	12.7	5.1	Sj	9.5	57.4	42.7	
9.5	59 2.5	5.2		9.5	11.0	50.5		9.5	20 2.5	21.0		9.5	17.3	3.0		9.3	40 18.1	23.0	
9.5	26.8	19.4		9.4	17.5	48.7	K	9.0	18.5	5.5		9.5	27.9	7.0		8.0	30.2	20.8	K
9.5	44.4	44.0		9.4	25.7	0.6		8.0	27.8	16.1	K	9.7	31.0	9.4		9.8	30.4	25.0	
9.8	47.3	15.3		9.5	34.0	9.1		9.5	37.0	25.0		9.7	59.4	5.5		9.0	35.4	48.5	
8.8	57.0	24.8	Sj	9.5	39.9	23.6		9.3	42.6	8.5		8.9	30 5.7	10.1	K	9.5	38.2	15.4	
9.5	0 0.1	32.4		10	57.7	59.3		9.0	51.2	35.3		9.5	16.1	51.5		9.5	46.5	59.1	
9.5	20.7	56.0		9.5	9 0.6	7.1		8.5	53.5	4.1		9.5	17.8	13.5		9.5	49.3	27.0	
9.5	24.8	18.0		9.3	10.6	51.7		9.0	57.4	44.3		8.5	22.9	31.9		9.2	57.4	48.4	
9.5	25.4	22.5		9.0	53.4	44.6		9.0	21 24.6	51.4		9.5	41.1	59.0		9.4	41 23.5	48.4	
9.5	51.4	2.1		8.5	53.6	7.1		9.0	42.6	7.1		9.5	57.5	21.9		9.8	38.0	53.3	
9.0	56.3	38.7		9.5	57.9	22.7		8.9	43.8	17.4		10	31 12.0	49.1		9.5	48.2	46.6	
9.3	59.5	50.7		9.5	10 0.8	18.7		8.5	46.6	54.0		9.0	18.0	39.2	S	9.5	52.2	22.6	
8.5	1 4.0	28.8		9.5	10.2	34.3		9.0	49.6	7.1		9.2	20.0	38.2		9.3	42 9.4	43.9	
9.5	11.1	33.3		9.5	37.6	7.1		9.8	52.1	39.7		9.5	22.1	55.3		9.3	43 4.0	1.5	
10	26.0	22.6		9.5	37.9	21.4		8.5	22 2.6	7.0		4.0	27.0	41.0	S	9.0	10.1	7.3	M
9.8	28.9	24.2		9.3	39.0	25.4		9.7	10.9	22.6		7.5	30.0	40.6	P	9.4	11.1	6.4	
9.9	37.9	23.5		8.5	11 7.3	41.5	K	9.0	37.9	21.8		8.3	45.0	44.2		9.4	11.8	34.5	
8.5	39.3	41.8		10	18.9	22.7		9.7	23 0.6	9.4		9.0	47.7	5.3	M	9.3	45.5	53.8	
8.5	40.6	54.7	K	9.6	20.1	29.8		9.5	0.7	55.4		9.0	58.9	36.6	Sj	9.5	52.2	16.3	M
9.0	44.8	16.3		9.0	20.7	11.5	Sj	9.0	3.0	25.0		9.7	32 18.0	46.9		8.5	44 11.5	57.8	Sj
9.5	59.1	31.0		9.2	34.8	15.5		9.2	14.4	44.2		9.1	30.0	45.7		9.5	22.4	38.2	
9.4	2 4.0	27.4		9.5	52.3	39.2		9.3	31.6	6.7		8.5	37.6	1.0	L	9.7	45 0.0	0.9	
9.0	10.1	33.2		9.0	12 16.0	28.4		8.8	33.0	28.1		9.7	57.6	57.5		10	4.0	3.5	
7.0	10.8	19.4	Sj	9.3	46.2	36.9	K	9.0	40.5	48.6		9.0	57.9	35.4		7.8	13.7	19.5	K
9.7	45.6	54.7		9.5	57.5	5.6		9.2	40.6	8.4		9.0	33 3.9	31.8		9.0	18.1	4.0	M
9.7	48.0	25.2		9.2	13 3.5	49.8		9.3	48.4	45.0		7.5	22.1	54.5	K	9.0	20.2	12.5	
8.5	50.5	2.4	L	9.5	10.6	7.4		8.5	24 1.5	5.3	K	2	26.6	1.8	K	9.0	44.4	44.2	K
9.5	3 13.8	56.4		9.7	49.1	31.9		8.5	2.7	12.4	K	9.4	27.3	0.5		9.5	46 0.0	2.7	
9.5	19.2	34.5		9.5	14 0.3	51.6		9.3	10.7	14.2		9.5	38.0	13.6		9.5	55.1	14.8	

1106 = —1° 783 1130 = —1° 799 1294 = —1° 951 1300 = —1° 954 1303 = —1° 956
1333 = —1° 997 1385 = —1° 1036 1399 = — 1° 1053

1401—1460					1461—1520					1521—1580					1581—1640					1641—1700				
	5h		—2°			5h—6h		—2°			6h		—2°			6h		—2°			6h		—2°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.2	47	21.3	32.2		10	56	13.1	22.2		9.5	6	48.8	10.4		var	15	25.7	7.7		9.6	23	36.4	56.5	
9.0		26.0	2.8		9.2		14.2	34.7	Sj	9.5		54.2	51.1		9.5		26.1	55.4		9.5		43.7	23.9	
9.3		45.5	56.4		9.6		25.6	3.0		9.5	7	4.1	2.5		8.8		52.3	34.7		9.3		57.1	55.5	
9.0		48.2	15.7		9.5		48.3	44.6		10		7.7	24.5		9.5		55.6	26.4		9.5	24	3.2	26.1	
9.1		54.8	25.0		9.2	57	22.0	15.1		9.9		15.2	33.1		9.8	16	0.5	58.6		9.2		10.6	54.6	
10		57.6	21.1		9.5		34.1	24.0		9.6		19.6	45.4		9.6		1.4	16.1		9.5		10.8	8.9	
9.8		58.1	37.7		9.0		36.3	42.8	S	8.7		30.8	55.7	K	9.5		4.4	51.2		9.8		31.3	39.1	
9.5	48	7.4	46.0		9.5		49.2	37.9		9.1	8	3.8	43.3		9.5		17.4	51.7		9.6		35.8	0.6	
8.8		11.5	30.8		9.5		53.0	3.4		9.2		19.8	53.2		9.2		44.1	20.8		8.7		42.2	40.8	
9.5		22.5	58.8		9.0	58	11.2	39.0		8.7		29.6	20.5	Sj	9.5		44.9	0.0		9.0		53.3	46.6	
9.5		32.3	15.1		9.5		12.2	32.7		9.4		34.5	34.2		9.2		57.1	53.9		9.8	25	4.8	46.6	
8.7		40.5	49.2	K	9.0		17.0	5.0		9.0		35.0	35.2	Sj	9.5	17	0.3	47.5		9.0		14.6	41.9	
8.5		45.1	13.4	K	9.0		22.0	10.0	Sj	8.9		40.4	13.8	M	9.8		7.6	41.3		9.5		10.8	10.6	
8.9		50.5	40.5	K	10		40.3	42.1		8.1		52.0	50.6	K	9.9		27.0	16.2		9.2		40.6	22.0	
9.5		55.3	20.5		10		43.2	28.3		9.8	9	3.1	22.3		9.8		29.1	40.1		9.5		46.8	10.0	
8.5	49	42.1	11.2	M	9.2	59	2.3	50.5	Sj	9.5		4.6	1.3		9.1		36.8	53.6		9.0		53.1	21.2	
9.0		45.0	33.1		9.5		18.1	25.6		9.4		8.7	52.0		9.0		37.3	56.8	K	9.1		59.0	46.8	
8.8	50	0.8	31.3	K	9.5		22.2	31.9		9.7		10.8	53.8		9.7		49.1	18.0		9.5	26	32.4	2.5	
9.9		12.4	0.7		9.2		25.4	59.2		9.5		19.7	27.2		9.5		53.8	1.6		9.5		34.2	26.5	
8.5		16.8	39.8	K	9.5		32.0	40.3		9.1		32.8	52.7		10	18	3.5	2.9		9.3		40.2	14.8	
9.3		20.0	4.5	M	9.0		45.4	53.8		9.1		34.2	17.2		7.0		18.9	54.4	K	9.1	27	2.5	37.8	
9.0		50.2	33.9	K	9.1		46.2	35.9		9.0		41.1	49.6		9.3		20.3	11.6		8.1		4.7	47.7	K
8.0		52.0	2.6	Sj	9.5	0	14.1	23.0		9.4		42.0	17.4		9.8		32.5	18.0		7.0		6.2	57.8	K
9.5	51	0.2	27.2		9.5		15.9	1.1		9.6		44.1	48.1		9.8		34.2	4.9		9.0		9.9	35.5	
9.5		5.1	19.6		9.5		17.9	4.7		9.5	10	0.3	11.4		8.8		45.7	22.3		9.5		48.3	0.1	
9.0		9.2	38.4		9.5		31.0	12.2		9.4		5.6	21.3		9.4		55.8	44.1		9.8		52.6	0.5	
8.5		18.0	6.7	K	9.5		44.9	0.3		9.4		11.5	51.0		9.5	19	4.0	27.4		9.4		55.6	57.6	
9.5		33.1	25.5		9.5		54.0	10.5		9.5		33.8	22.8		9.5		20.5	14.7		9.0	28	0.3	43.9	
4.5		40.0	3.6		9.5		56.7	1.4		9.5		48.3	29.7		9.1		29.6	38.5		8.0		17.2	7.4	K
9.0		41.4	58.5		9.0		57.2	34.6		9.3		50.2	54.2		9.3		46.1	22.5		9.5		23.1	45.0	
9.2		46.3	51.3		9.3		59.3	40.4		9.4		54.2	46.8		9.5		48.4	35.7		8.5		36.9	27.5	
9.4		50.3	50.9		9.5	1	7.3	49.7		9.2	11	6.0	8.1	M	9.6		50.4	35.7		9.4		58.6	0.0	B
8.5	52	8.1	21.5	K	9.3		16.1	21.1		8.7		13.6	55.3	L	9.0		51.0	58.7		9.5	29	5.2	28.2	
8.5		9.2	38.5		8.7		25.2	28.3	Sj	8.6		17.7	25.6		9.5		59.5	57.7		9.8		6.7	6.1	
9.5		17.2	36.3		7.5		38.0	1.5	Sj	9.5		27.7	5.9		9.0	20	11.6	21.3		9.5		12.8	50.6	
8.5		26.1	20.6	K	9.9		50.5	28.2		8.7		30.8	57.3		8.7		16.7	7.3	M	9.2		14.5	57.5	
9.5		53.3	44.0		9.5	2	17.0	11.7		10		41.9	35.6		8.2		28.9	34.1	K	9.8		28.7	44.9	
9.5	53	15.4	58.4		9.7		40.7	22.7		9.6		44.5	37.4		9.6		29.8	31.4		9.8		30.8	29.7	
9.0		25.0	4.0		9.4		50.0	1.6		9.8	12	0.4	42.5		9.7		36.0	24.0		9.2		34.7	0.9	
9.6		38.1	15.8		9.8	3	20.8	35.3		9.5		19.5	38.0		9.6		45.7	26.0		7.5		47.1	3.6	K
9.0		50.1	15.7	Sj	9.5		28.3	50.6		10		23.6	4.2		9.4	21	2.0	14.6		9.0		48.8	46.4	
9.5		51.2	35.8		8.9		31.3	44.8	Sj	9.4		23.8	44.3		9.5		7.1	18.6		9.6	30	7.0	16.3	
9.7		59.0	4.9		9.5		34.0	14.0		9.5		28.7	8.0		9.5		11.7	52.8		9.3		7.8	55.0	
9.5	54	13.1	10.2		9.4		34.6	34.5		5.5		43.1	52.5	K	8.2		34.2	25.1	K	9.4		8.9	32.4	
9.7		16.1	23.1		9.4		39.9	20.5		9.5		50.4	34.9		8.5		40.4	35.0	K	9.5		10.6	45.0	
10		17.0	11.5		9.5	4	10.4	50.2		9.7		57.7	43.4		10		41.9	49.0		9.5		23.2	23.9	
9.0		24.0	4.9	K	9.5		24.2	29.9		9.4		59.3	10.8		9.2		45.7	43.1		9.5		38.0	17.7	
8.0		30.1	21.4	K	9.5		24.9	1.5		9.1	13	7.3	1.6		9.0	22	4.2	7.1	L	9.0		42.2	3.7	
9.4		52.2	30.5		9.5	5	3.1	20.7		9.5		19.4	24.2		9.1		4.8	20.3		9.6		59.8	2.6	
9.3		53.3	43.6		9.0		13.4	55.7	K	9.1		39.6	15.7		9.5		7.1	4.5		9.2	31	1.5	47.3	
9.5		59.0	8.3		9.5		15.2	36.1		9.2		40.0	50.0		8.7		13.1	46.1	K	6.4		3.7	25.0	L
9.5	55	11.0	7.0		7.0		27.8	28.1	Sj	10		47.9	3.4		9.5		18.3	10.2		9.9		4.6	21.7	
8.3		13.1	21.3	K	8.5		45.9	35.8	K	9.5		54.1	38.9		9.5		20.8	36.3		9.0		13.2	16.8	
9.5		23.0	13.7		9.0	6	9.2	38.9	Sj	9.5		54.6	8.6		9.5		21.5	7.7		9.3		18.4	34.4	
8.0		24.3	50.8		7.9		18.1	13.0		9.8	14	36.3	27.3		9.7		31.9	48.4		9.2		22.2	13.0	
8.5		26.1	24.4	K	9.3		23.7	48.5		10		47.6	22.4		9.4		46.9	34.0		9.5		34.9	33.5	
8.7		52.0	3.8	Sj	9.3		24.4	31.6		9.8		50.2	34.2		9.5		59.9	47.5		9.8		35.7	55.2	
7.5	56	2.2	28.9	K	9.7		24.9	6.7		9.0		58.1	22.1		9.0	23	1.0	36.6		9.5		48.5	18.6	
9.6		12.2	1.7		10		35.6	42.3		7.8	15	13.2	38.6	Sj	7.5		11.5	55.7	Sj	9.0		58.8	54.3	
9.5		12.3	49.9		9.5		43.0	57.0		9.1		17.0	2.1		9.5		23.3	29.3		10	32	20.0	17.1	

1508 = —1° 1141 1536 = —1° 1173 1580: 16ᵗ63 1′48″8 B_1, Ep. 1884.13
1581: 25ᵗ35 7′38″4 B_2, Ep. 1883.62 1672 = —1° 1292

1701—1760				1761—1820				1821—1880				1881—1940				1941—2000			
	6h	—2°			6h	—2°			6h	—2°			6h—7h	—2°			7h	—2°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.0	32 22.9	40.8		9.8	39 36.0	17.4		9.2	47 8.0	35.6	K	9.7	53 40.9	51.2		8.4	0 57.8	57.8	K
9.5	36.0	1.9		9.0	36.4	33.5		9.4	8.6	38.4		9.5	55.4	7.5		9.7	1 11.2	54.7	
9.5	38.2	32.8		9.5	39.9	10.9		9.5	12.1	2.6		9.1	54 1.6	33.0		9.4	21.7	8.8	
7.8	48.0	13.8	Sj	9.1	52.9	41.2		9.5	17.1	17.0		9.3	3.3	55.8		9.6	29.5	43.2	
9.5	51.1	16.5		9.5	54.8	5.2		9.9	36.3	58.0		8.0	11.7	54.7	K	8.8	34.1	28.5	K
8.5	58.4	53.3	K	8.9	40 4.0	15.9		9.2	40.1	34.3		9.0	11.7	54.5	K	9.6	44.0	19.1	
9.1	33 4.9	44.8		9.8	15.5	5.4		6.3	44.2	37.0	K	9.6	21.2	55.9		9.3	44.4	11.9	
9.3	25.1	18.7		9.2	30.9	12.8		9.3	46.3	37.4		9.8	23.0	49.2		9.8	45.3	11.2	
9.3	33.5	15.8		9.8	46.0	50.7		7.8	52.0	17.9	L	9.8	47.0	56.8		8.8	48.3	56.2	Sj
9.6	42.0	56.9		9.3	56.4	46.6		9.0	48 1.6	34.9	K	9.6	49.1	17.9		9.5	2 8.2	33.7	
9.1	47.3	47.1		9.3	41 9.7	2.1	M	9.4	7.1	1.0		9.8	49.2	7.3		9.4	24.6	2.8	
9.5	49.2	12.5		9.5	14.5	55.6		9.5	10.7	18.8		9.7	55 6.5	52.6		9.5	37.0	16.4	
9.7	49.3	3.3		9.5	38.0	17.0		9.7	29.4	1.4		9.5	17.0	11.1		9.4	41.8	42.6	
9.5	34 1.3	0.9		9.7	49.6	42.6		9.8	44.0	27.8		9.8	31.6	32.8		9.8	56.5	47.7	
9.4	3.4	33.2		9.8	51.0	26.0		8.6	45.0	59.6	K	9.8	50.6	55.0		9.1	57.9	9.1	K
8.0	4.8	12.4	K	6.1	58.2	6.6	K	9.5	47.2	14.3		9.2	51.9	57.3		9.7	58.4	6.3	
9.5	7.5	53.9		9.2	42 1.0	29.4		9.5	51.1	23.0		9.4	53.8	3.4		9.7	3 3.8	12.8	
9.5	7.7	36.8		9.5	8.9	58.3		10	51.8	0.5		9.3	56 6.2	32.2		9.1	6.2	6.8	K
9.5	13.5	5.8		9.8	19.0	6.8		9.8	49 4.0	49.0		8.0	9.5	49.0	K	9.3	8.0	52.3	
9.2	19.7	59.2		9.7	24.9	2.0		9.0	4.4	0.5	K	8.3	19.1	15.8	K	9.4	12.2	3.9	
9.3	23.3	1.5		9.5	38.7	30.5		9.5	18.0	58.3		9.5	19.6	36.5		9.1	21.3	32.6	
9.4	36.8	45.6		9.5	39.9	1.0		9.7	22.2	49.5		9.8	20.0	19.6		9.2	22.3	36.2	K
9.6	53.4	0.3		8.5	41.7	6.9	K	9.4	27.8	39.9		9.1	33.0	2.5		8.4	34.5	19.6	K
9.8	58.0	12.2		9.0	43 1.3	54.5	K	9.1	54.5	17.5	K	9.1	43.0	10.0	K	9.3	34.7	53.2	
8.7	35 0.1	55.8	K	9.7	2.2	52.6		9.7	54.8	2.8		9.5	47.5	4.2		9.5	36.9	30.5	
9.2	6.6	55.2		9.4	4.0	55.9		9.3	50 8.0	3.8		9.5	53.9	16.0		9.0	37.3	36.5	K
9.5	18.3	44.4		9.7	23.0	16.7		9.2	9.5	45.1	K	9.8	58.3	31.3		9.8	40.2	7.6	
9.2	24.3	9.0	Sj	9.7	25.4	11.2		10	14.2	7.5		8.6	57 5.0	50.6	K	9.8	44.3	12.5	
8.8	33.9	36.1	K	9.7	25.8	38.7		9.3	18.6	5.5	M	9.7	8.4	38.8		8.5	57.5	46.2	K
9.2	40.6	42.6		9.7	36.1	6.2		9.7	26.2	51.1		9.6	9.2	39.8		9.3	59.8	2.7	
9.5	41.6	22.0		9.8	39.4	42.8		9.4	27.2	40.6	K	9.8	10.7	5.7		9.4	4 18.4	2.9	
8.5	44.9	44.8	K	9.7	40.0	10.7		9.6	31.7	38.9		10	21.7	59.1		9.5	22.0	43.1	
9.1	49.2	24.8		9.5	51.5	48.4		9.5	34.9	51.4		9.8	23.0	46.6		9.5	30.7	2.2	
8.5	57.2	36.6	K	8.2	52.3	46.9	K	9.4	37.1	30.9	K	9.5	30.1	57.3		8.8	42.5	47.8	K
9.5	36 8.9	14.1		9.5	44 7.9	10.2		9.2	51 8.7	22.4	K	10	43.7	12.3		9.8	44.3	29.5	
9.8	31.4	5.0		8.8	15.9	51.0		7.8	12.6	50.2	L	10	49.0	29.1		8.3	58.3	46.7	Sj
9.4	50.0	17.1		9.1	19.0	28.9		9.5	19.5	46.3		9.5	58 4.6	6.8		9.8	5 1.9	11.8	
9.6	53.4	33.7		7.0	22.6	13.7	K	9.8	19.9	16.1		9.6	30.0	56.9		9.7	4.3	52.2	
9.4	54.7	50.3		9.5	25.7	19.5		9.8	22.9	8.5		9.8	32.7	32.5		9.4	6.6	14.2	
9.5	37 1.6	39.5		9.8	31.8	58.4		9.4	24.2	56.4		9.8	42.5	53.9		8.2	7.1	19.8	K
8.5	7.0	16.7	K	7.7	33.0	0.2	K	9.4	43.7	58.1		9.7	46.3	14.5		8.5	17.4	18.8	K
9.5	13.4	14.2		9.0	37.3	6.0		9.5	52.5	46.4		9.7	47.9	22.2		8.3	18.0	42.8	K
9.5	28.7	37.0		9.5	48.5	28.8		10	58.3	9.3		9.3	57.2	6.6		9.2	19.1	9.3	
8.8	40.3	43.9	K	9.6	45 3.2	36.4		10	52 4.4	3.4		9.6	59.2	10.5		9.4	22.0	21.1	
9.5	45.4	31.9		9.0	6.4	10.4		9.5	15.1	32.9		7.6	59 11.7	53.9	Sj	9.7	23.3	52.4	
9.2	48.1	40.8	K	8.5	13.6	53.6		9.7	17.2	21.9	M	9.7	15.3	39.9		9.2	25.7	5.7	
9.8	38 5.2	20.7		9.7	15.7	2.2		9.4	22.8	0.9	B	9.7	17.9	24.2		8.2	27.0	56.2	K
9.3	8.6	31.7		8.9	37.0	11.5		9.7	36.6	51.1		9.0	20.8	45.7		10	34.2	29.9	
9.4	8.6	47.2		8.8	41.3	53.4	L	8.8	45.1	43.4		8.5	21.2	27.8		9.5	35.8	25.1	
9.4	14.3	20.8		9.6	46.4	23.9		8.8	53.3	39.0		9.0	27.5	18.6		9.8	39.3	43.9	
9.7	16.7	11.8		9.2	46 9.4	9.6		9.7	57.3	18.2	M	8.0	33.7	31.6	K	9.8	46.4	41.1	
9.7	44.8	48.7		9.5	12.1	15.4		9.5	53 2.5	46.4		9.6	37.4	42.8		9.2	46.7	7.5	
9.5	45.9	25.4		9.7	22.3	21.3		8.2	4.2	13.7	K	9.3	41.7	9.0		9.3	51.8	44.9	
9.0	53.0	14.5	K	9.5	30.0	30.4		9.1	8.5	48.7		9.0	52.5	24.6	K	9.3	54.0	2.8	
9.6	56.0	8.5		9.5	31.5	3.4		9.5	9.4	8.2		9.3	56.0	48.7		9.4	54.2	4.1	
9.5	39 9.4	52.9		8.9	47.1	33.3	K	9.3	11.6	46.7		8.3	0 0.5	44.6	K	9.1	58.1	24.0	K
9.5	11.0	7.5		9.7	53.5	45.7		9.1	14.7	51.0		9.2	16.8	36.3	K	9.3	6 3.2	13.5	
9.6	12.9	3.6		9.3	57.3	55.2		9.8	20.6	36.5		9.5	19.6	29.6		9.8	13.7	8.9	
9.8	21.4	45.0		9.2	59.6	30.6	K	9.4	27.4	25.4		9.2	32.7	37.0	K	9.8	19.5	49.5	
9.4	26.3	29.6		9.1	47 4.3	33.2	K	9.5	34.5	44.5		9.3	41.4	22.5		9.7	20.3	35.5	

1714 = —1° 1332 1782 = —1° 1399 1833 = —1° 1457 1838 = —1° 1461 1840 = —1° 1464

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	7h	—2°			7h	—2°			7h	—2°			7h	—2°			7h	—2°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.0	6 38.4	39.9		9.5	12 57.2	32.3		9.4	20 20.0	2.3		9.1	27 4.6	53.6		9.6	34 3.0	56.7	
9.4	55.4	2.3		9.8	13 1.6	24.9		9.3	27.0	48.5		9.0	13.0	1.4	M	9.3	15.6	39.7	
9.2	57.5	4.3		9.5	31.0	43.4		8.4	27.2	47.0	L	9.1	16.8	17.1		9.6	26.2	14.3	
9.6	7 6.0	19.6		9.1	47.4	59.8		9.5	29.6	27.7		9.5	20.1	4.2		9.5	29.2	18.9	
9.8	24.9	16.9		9.2	48.3	9.5		9.0	38.9	16.5		9.2	28.6	53.3		9.7	42.1	56.4	
9.3	34.2	10.0		9.0	49.6	7.9	Sj	7.0	42.8	35.4	B	9.5	37.9	38.1		9.8	42.6	51.1	
9.0	43.3	54.2		9.5	50.4	0.4	B	9.5	44.3	56.3		9.4	39.6	53.1		9.5	35 2.9	18.0	
8.0	44.7	34.3	L	8.7	57.6	24.7		9.4	50.3	58.1		8.8	42.5	1.5	K	9.4	4.0	52.4	
9.3	46.9	20.7		9.1	59.4	17.8		8.4	55.0	48.4	L	9.7	28 0.6	53.1		9.4	11.2	33.5	
9.7	8 2.4	57.1		9.5	14 1.3	15.6		9.6	21 10.4	21.6		10	3.1	50.0		9.3	13.3	52.0	
9.8	21.1	41.3		9.5	4.7	0.1	B	9.7	10.4	0.3		9.8	4.9	50.6		8.2	21.0	20.7	Sj
9.5	24.0	15.6		9.5	8.4	1.2		9.1	13.6	52.9		8.9	20.5	47.3	K	8.9	23.5	43.2	
9.5	29.6	56.4		9.5	32.2	31.4		9.4	17.2	51.6		9.8	36.3	25.8		9.5	35.8	37.9	
9.6	31.7	5.8		9.2	38.2	45.8		9.2	21.5	39.4		9.8	37.3	27.1		9.0	41.6	27.2	
9.5	32.8	9.3		9.3	39.3	54.6		9.0	25.5	8.7		9.8	40.2	30.5		9.5	46.0	1.7	
9.4	36.6	55.0		9.5	48.1	26.7		9.3	31.1	44.6		9.0	47.0	40.5	K	9.9	36 6.9	20.8	
9.5	41.9	17.6		9.0	51.7	31.3		9.5	31.8	40.3		7.4	48.3	50.2	B	9.4	11.6	28.9	
9.5	44.0	35.0		9.7	15 0.6	49.2		9.5	38.2	56.9		9.5	50.5	47.2		9.9	32.4	59.8	
9.4	46.2	0.4	B	6.5	2.4	42.4	Sj	9.2	45.9	49.1		9.5	29 5.7	31.9		9.5	33.9	17.5	
9.3	52.8	0.6	B	9.1	2.8	39.6	K	9.3	50.8	37.0		9.2	16.9	51.6		9.4	34.5	3.7	
8.9	9 7.5	44.3		9.7	6.1	59.3		9.1	58.7	40.2		9.0	19.3	54.2		9.5	36.3	36.5	
8.8	12.7	59.5		9.7	20.2	52.3		9.4	59.4	45.6		9.5	20.1	8.4		9.3	52.1	26.5	
9.4	18.0	45.5		9.4	35.2	10.2		9.2	22 0.7	51.0		9.7	43.1	43.1		8.0	55.4	54.5	Sj
9.6	25.3	37.1		9.4	44.5	23.1		9.1	12.6	56.1	Sj	9.8	46.4	48.4		9.5	59.0	0.4	
9.5	27.8	10.9		9.8	52.6	1.6		9.9	25.5	27.1		9.7	56.3	36.7		9.0	37 7.1	40.8	
9.8	49.9	44.6		9.3	16 6.1	28.5		9.5	31.4	43.1		8.8	30 3.7	51.6	Sj	9.4	32.7	6.6	
9.0	57.1	29.3		9.0	10.2	19.0	Sj	9.7	56.2	47.2		7.8	31.9	16.5	L	9.4	34.0	25.1	
8.8	10 4.1	25.2		9.8	12.6	18.6		9.8	58.6	12.8		8.4	38.6	57.1	K	9.2	40.0	1.2	B
9.4	8.4	2.0		9.2	15.7	33.1		9.2	23 0.4	21.9	M	9.2	44.5	1.3		9.8	44.9	43.7	
8.8	9.5	18.4	M	9.5	41.5	9.9		9.4	1.4	40.0		9.1	45.2	31.4		9.5	58.5	0.3	
9.0	14.7	38.0		9.8	45.0	40.9		9.5	39.1	20.1		9.5	52.8	59.1		9.5	38 6.9	45.9	
9.4	16.1	42.2		8.8	57.6	18.7	M	9.4	43.1	29.7		9.3	31 2.7	22.7		9.7	13.5	46.1	
9.5	20.4	5.0		9.8	59.5	10.0		9.4	43.8	36.5		9.5	9.3	37.1		9.8	19.7	34.2	
9.5	27.6	50.3		9.1	17 0.6	33.8		9.8	50.6	7.3		9.2	14.7	51.5		9.5	23.2	7.0	
9.5	37.1	28.1		9.5	14.7	54.8		9.3	54.9	14.7		9.6	18.1	9.7		9.5	24.3	13.5	
9.5	39.8	37.3		9.5	19.6	49.9		9.1	56.9	7.4		9.5	19.7	31.7		9.1	25.0	21.5	
10	41.0	6.4		9.4	32.1	26.0		10	24 5.0	15.2		9.6	27.4	18.4		9.1	26.2	34.4	K
9.1	44.4	17.5	K	9.3	33.6	50.5		9.2	10.3	57.0		9.7	31.3	38.0		9.5	41.1	3.4	
8.0	47.3	51.3	L	9.0	35.9	21.4		9.5	10.8	19.3		9.4	33.0	27.0		9.6	41.7	51.4	
9.6	11 9.7	52.0		9.4	53.6	9.2		9.1	24.2	25.3		9.4	45.4	19.9		9.5	48.6	48.0	
9.1	10.8	43.2		9.0	57.5	51.7	Sj	9.2	24.9	38.2		9.1	47.4	19.3		9.5	54.7	44.8	
9.4	14.1	47.1		9.2	18 1.9	16.6	M	9.5	33.7	51.5		9.8	49.8	58.4		9.1	39 7.1	6.6	M
9.8	31.6	8.5		9.8	10.4	1.3		8.8	52.6	54.4		9.6	32 5.7	48.7		9.5	9.1	54.9	
9.1	35.3	10.0	K	9.5	19.8	57.4		9.4	25 3.4	59.3		10	5.8	49.8		9.4	13.7	12.6	
9.7	50.0	18.3		9.4	29.6	25.8		9.7	8.6	50.3		9.5	19.8	36.2		9.5	20.9	19.5	
9.1	53.7	14.2	K	9.7	32.6	0.5		9.7	10.1	29.0		10	20.2	11.7		8.9	26.6	49.3	
9.7	55.0	15.0		9.7	44.8	0.4		8.8	19.5	27.1		9.7	32.4	3.1		9.2	27.9	59.3	
9.7	12 4.2	6.3		9.7	56.2	59.0		9.5	23.3	40.5		9.3	34.0	46.1		9.6	37.5	21.5	M
9.7	4.8	2.0		10	19 3.9	44.4		9.8	26.6	48.7		10	37.3	43.4		9.5	42.5	47.4	
8.7	9.4	17.8	K	9.7	5.1	40.6		9.5	38.2	9.4		9.9	37.3	2.7		9.7	40 1.1	55.7	
9.7	15.1	49.5		8.1	17.8	45.8	Sj	9.6	41.1	0.3		9.7	38.8	8.1		9.5	26.8	41.0	
9.4	15.4	57.5		9.6	18.9	34.2		9.5	55.9	23.3		8.9	43.7	13.0	K	10	32.4	17.8	
9.5	18.5	45.8		8.5	21.2	41.8		10	26 9.5	50.3		9.7	51.8	54.4		9.9	35.9	17.5	
9.0	24.8	35.6		9.4	52.9	30.3		9.1	10.2	31.5		9.4	33 14.5	7.1		9.5	38.3	30.6	
9.6	29.8	35.4		8.9	57.6	53.5		9.8	13.9	20.3		8.5	45.4	20.8	L	9.8	43.6	51.5	
9.8	33.5	19.3		9.4	59.2	31.2		9.6	21.7	33.2		9.2	46.1	7.4		9.0	44.4	14.6	M
9.3	43.3	11.9		8.5	20 2.3	57.1	Sj	9.1	40.0	22.8		9.8	47.2	58.5		9.4	45.4	35.6	
9.1	44.6	26.9		8.7	6.3	13.9		9.0	45.7	31.3		9.5	52.0	27.0		8.7	51.3	36.7	K
8.7	48.9	40.7	Sj	9.4	15.5	1.3		9.1	53.4	37.9		9.4	54.9	51.4		9.5	41 7.2	8.4	
9.4	51.5	47.5		9.5	19.6	51.6		9.0	57.3	56.1	K	9.2	56.0	22.5		9.3	17.2	42.8	

2019 = —1° 1622 2020 = —1° 1624 —1° 1655 zu streichen oder = —2° 2049 2067 = — 1° 1667
2071 = —1° 1672 2072 = —1° 1674 2103 = —1° 1702 2188 = —1° 1768 2264 = — 1° 1824
2268 = —1° 1828

2301—2360					2361—2420					2421—2480					2481—2540					2541—2600				
	7h		—2°			7h		—2°			7h—8h		—2°			8h		—2°			8h		—2°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.6	41	42.7	31.0		9.8	50	14.3	49.7		9.2	58	17.4	54.8		9.8	5	41.7	50.9		9.4	14	32.6	42.1	
8.4		47.8	55.0		9.8		15.3	59.9		9.8		37.0	57.6		8.7		44.0	2.2	Sj	8.8		34.1	28.2	K
10	42	10.9	56.3		9.0		53.4	10.8		9.5		44.7	32.2		9.0		48.6	28.6		9.3		39.3	16.8	
9.3		16.1	4.3		9.6	51	8.0	34.8		8.5		48.6	22.0	K	9.9	6	21.9	48.9		9.4		43.3	38.0	
9.0		20.6	56.7		9.4		12.3	54.5		9.4		53.5	50.5		9.0		23.9	44.9		9.5	15	29.1	3.6	
8.0		37.9	19.7		9.8		22.4	54.1		9.6	59	10.3	49.3		9.8		30.1	43.0		8.0		36.6	29.8	K
8.2		53.4	19.2		9.0		33.3	31.3		9.4		11.2	33.5		10		30.7	10.6		9.5		51.3	48.6	
9.5	43	2.1	4.0		9.5		33.9	9.0		9.5		19.6	38.8		9.5		53.2	7.9		9.8		56.8	15.6	
9.1		8.4	47.5		9.5		42.2	30.1		9.7		28.6	43.8		9.1		54.5	25.8		9.8	16	0.0	13.2	
9.5		15.7	29.6		9.5		59.0	16.7		8.8		36.9	33.7		9.2	7	17.8	35.5	Sj	9.4		6.4	48.7	
8.5		21.1	57.3	L	9.5	52	3.1	45.4		9.5		41.4	13.9		9.5		23.0	23.5		9.2		6.7	13.9	
9.5		30.5	47.6		9.0		11.4	52.8		9.5		47.7	50.5		9.9		26.5	25.9		9.2		15.1	28.9	
9.5		31.9	17.6		9.8		33.9	58.7		9.5		58.0	16.1		9.8		43.8	13.5		8.8		16.8	44.9	
9.5		33.0	29.7		9.5		34.9	28.7		9.1		58.2	43.4		9.5		58.7	11.2		9.4		25.1	26.6	
8.3		33.6	7.8	L	9.1		48.2	26.7	Sj	8.8		59.3	57.2		8.8		59.8	23.5		9.5		28.5	52.6	
8.3		42.4	45.5	L	8.9	53	2.4	50.7		9.0	0	4.9	43.1	K	9.6	8	6.4	0.8		9.6		34.6	16.8	
8.9	44	26.5	25.7	K	9.3		22.0	38.1		7.0		25.3	59.5		9.8		7.6	58.0		8.2		42.1	29.4	L
9.8		31.1	29.2		9.1		24.5	17.9		9.5		26.4	31.7		9.0		19.5	45.3		9.5		43.1	42.7	
9.7		33.1	56.6		6.8		26.8	28.8	K	9.3		27.9	33.7		9.2		29.5	55.5		8.7	17	3.7	41.2	Sj
9.5		45.2	47.3		8.8	54	8.7	47.6	K	9.7		37.5	53.4		9.5		32.0	7.8		9.1		7.6	50.0	
9.5		49.2	33.1		9.5		9.2	28.2		9.5		51.0	16.8		9.8		48.5	23.6		8.8		34.8	56.9	
6.7		51.4	41.1	K	9.8		28.4	40.6		9.5		52.4	8.9		9.6		51.8	27.3		9.5		44.5	24.6	
9.8		53.5	1.4		8.2		44.9	34.8		9.7		53.6	47.6		8.8	9	7.6	26.6	K	9.3		56.7	9.0	
9.0	45	13.0	45.1	K	8.7		50.1	23.0		9.6		55.9	4.3		7.0		9.9	47.0	Sj	9.5	18	5.9	44.2	
7.8		16.4	15.2	L	9.7	55	5.3	30.4		9.9		58.8	33.1		9.2		22.0	1.6		8.6		13.9	38.8	
9.6		32.6	49.1		9.7		6.8	32.5		9.3	1	1.9	36.2		9.2		43.5	0.7		9.0		33.6	30.9	
9.5		36.6	54.2		9.8		8.5	7.0		9.0		9.2	6.8		9.5		47.5	43.4		9.4		38.3	52.6	
9.5		43.6	28.5		8.2		19.5	52.0		9.6		13.3	56.3		9.6		48.0	27.0		9.6		46.0	40.4	
9.3		50.1	20.9		9.8		20.2	31.5		9.0		14.4	34.2	Sj	6.3		52.4	55.1	L	10		48.6	49.5	
9.4		50.6	5.7		9.0		20.7	15.8		4.8		18.8	33.6	Sj	9.0		53.8	24.4		9.4	19	6.5	44.7	
8.8	46	2.3	40.0	Sj	9.5		36.8	18.1		9.9		20.0	33.6		8.3		55.5	46.3	L	9.5		8.7	35.2	
9.5		8.8	15.5		9.4		38.7	35.3		9.8		30.0	32.4		7.3	10	11.7	39.4	L	8.2		9.8	15.8	
9.8		19.9	41.2		9.1		40.8	26.7		9.2		32.1	47.7		9.0		15.3	17.4		9.4		19.2	31.4	
9.8		20.0	55.7		8.3		42.0	19.5	K	9.0		39.5	59.4	K	9.4		20.1	8.5		9.5		26.6	7.9	
9.6		28.9	12.9		9.5		47.8	31.1		9.7		43.8	33.7		9.0		54.7	36.1		9.6		35.0	15.2	
9.7		45.8	16.8		9.4		56.1	41.1		9.8		51.3	48.2		9.6		59.3	8.6		9.0		56.4	58.0	K
9.3		53.5	26.8		9.5	56	4.4	34.9		9.5		59.6	22.0		9.6	11	4.7	40.5		8.8	20	10.7	35.0	K
9.5		55.5	0.9		9.4		21.4	49.7		9.5	2	15.1	38.7		9.7		10.7	13.3		9.5		37.9	23.9	
9.5	47	5.6	5.4		8.9		21.7	43.6		9.5		21.7	18.7		9.7		13.0	12.5		9.3		50.4	29.4	
9.5		11.2	33.4		9.0		23.9	31.5		9.2		25.4	17.8		9.5		15.1	0.0		9.1		52.5	45.6	
7.2		15.9	25.3	L	9.2		28.6	22.8		9.1		25.6	33.3		10		33.6	42.4		7.0	21	8.5	2.8	K
8.7		17.7	34.7	L	9.1		31.0	38.0		9.5		35.3	16.1		8.6		33.8	52.3	Sj	9.8		22.3	42.8	
9.5		30.6	24.9		9.5		46.8	10.4		9.0		37.6	31.0	K	9.8		35.2	18.4		9.5		23.5	5.1	
9.6		41.2	51.6		9.8		46.9	58.7		9.1		54.0	2.4		9.8		36.7	21.1		9.1		32.1	57.5	
9.5		53.2	28.7		9.2		53.6	55.5	K	8.7		58.2	50.5	Sj	9.0		38.1	26.7		9.5		40.2	19.2	
9.8		58.0	31.5		9.0		56.3	59.1	K	9.4	3	11.4	52.7		9.6		40.0	53.2		9.8		56.8	12.5	
9.7	48	1.5	1.9		8.5	57	6.4	10.9		9.1		12.0	10.4		8.9	12	5.0	14.5	M	9.4	22	6.7	30.9	
9.5		10.8	19.0		9.5		7.9	12.2		9.3		16.0	1.5		9.1		44.2	47.0		9.5		17.1	30.4	
9.5		19.2	29.6		9.1		17.8	52.4		9.5		22.5	42.1		8.2		45.3	20.1	K	8.8		23.7	40.2	K
8.5		25.8	54.4	Sj	9.4		18.5	54.2		9.5		46.4	31.0		9.6	13	1.2	12.0		9.2		28.1	44.6	K
9.5		26.9	45.0		9.5		23.2	41.1		9.0		56.7	32.5	K	8.7		5.2	10.7	K	9.8		36.0	6.1	
9.1		43.9	57.4		8.7		25.1	24.4	Sj	8.5		59.7	10.4	L	9.5		7.8	38.6		9.6		53.0	53.0	
10	49	19.3	9.5		9.0		34.9	31.6		9.5	4	3.8	28.2		9.6		35.7	35.5		9.5		54.7	53.6	
10		20.1	11.9		9.3		42.4	59.8		9.3		25.1	3.5		9.2		36.3	39.7		9.7	23	17.2	53.8	
9.6		24.7	50.9		9.0		49.0	16.6		9.0		33.1	27.9	K	9.0		57.0	57.5		8.5	24	1.4	2.2	K
9.5		35.5	41.2		9.8		53.6	46.4		8.8		36.5	55.8	K	9.4	14	9.9	48.1		9.5		4.3	30.5	
8.8		45.8	9.0	Sj	9.5	58	1.9	35.1		9.5		55.2	57.0		9.5		13.9	20.7		9.8		4.6	43.1	
9.2	50	2.8	23.5		9.0		4.0	18.9		9.4	5	22.0	2.2		9.1		16.4	21.8	K	10		10.2	47.4	
8.9		3.5	57.2	K	9.5		7.6	1.0		9.5		24.3	46.1		8.9		21.2	41.2	Sj	9.6		20.3	33.1	
7.8		10.4	33.5	K	9.5		13.6	22.2		8.5		28.3	11.8	K	10		29.8	28.3		9.3		43.9	18.4	

2419 und 9.4 pr. 1:2 3:2 B, zusammen = —1° 1947 2468 = —1° 1973 2506 = —1° 2000

2601—2660				2661—2720				2721—2780				2781—2840				2841—2900			
	8h	—2°			8h	—2°			8h	—2°			8h—9h	—2°			9h	—2°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.6	24 45.6	24.9		9.7	35 0.2	40.0		9.8	45 23.0	30.1		10	56 29.3	58.3		9.7	11 37.0	43.5	
9.1	50.7	53.4		9.7	21.6	54.9		10	24.0	26.9		8.9	50.0	24.7		9.5	49.5	14.3	
9.4	54.1	31.3		9.5	26.5	44.6		9.4	26.1	5.6		9.1	51.3	18.2		9.3	12 14.7	39.5	
9.0	25 3.6	10.1		9.1	31.0	39.4		9.0	37.0	53.2	K	9.8	55.6	44.9		9.6	34.5	12.3	
9.1	9.4	58.0		9.5	36.5	1.9		9.1	46 2.9	44.8	K	9.6	57 8.9	41.4		10	58.5	10.4	
9.5	13.7	53.7		8.4	37.7	10.0	K	9.8	19.3	54.5		9.3	58 5.1	3.2		9.5	13 5.9	51.4	
9.3	15.3	3.6		10	36 0.3	8.9		10	50.1	37.8		10	27.6	51.3		9.5	8.4	41.5	
7.5	20.7	41.5	Sj	9.5	4.2	35.5		9.4	55.5	14.8		9.8	32.8	23.6		9.6	17.5	34.6	
9.5	27.6	9.2		10	5.7	5.1		10	47 9.2	18.3		9.4	45.2	33.9		9.2	33.8	48.7	
9.3	36.9	18.4		10	11.4	2.0		9.9	28.3	8.2		8.8	59 2.9	21.1	K	9.5	36.4	4.0	
9.4	48.7	42.4		9.3	39.4	42.5		10	32.2	11.5		7.7	10.1	1.5	K	1 8.8	41.5	21.2	K
9.1	58.0	54.9		9.7	56.8	49.4		9.9	52.4	16.0		10	28.7	38.2		8.8	43.1	56.3	
7.9	26 13.0	29.4	K	9.5	37 23.8	37.4		10	53.2	42.5		9.4	50.0	54.3		8.8	43.4	11.2	K
9.4	27.1	43.8		8.3	36.2	26.6	K	9.1	58.9	11.7		8.8	0 11.8	30.2	K	9.7	51.8	29.8	
8.3	27 0.4	46.5		9.7	39.8	6.3		6.9	48 4.2	35.7	L	9.6	15.2	34.5		10	56.5	42.2	
8.4	8.2	13.6	L	6.9	38 0.8	5.4	K	9.8	17.7	18.7		10	24.0	40.0		9.8	14 0.0	35.8	
9.7	10.1	57.8		8.9	40.9	46.4		7.0	20.8	14.2	K	10	49.5	59.5		9.5	10.6	5.1	
8.0	17.8	15.4	K	10	39 0.3	8.9		9.7	26.7	48.6		10	1 8.2	35.3		9.3	22.1	46.4	
8.7	37.3	30.1	Sj	10	3.7	6.7		9.3	53.8	14.6	K	9.5	31.5	3.4		7.2	25.0	10.1	Sj
9.2	51.9	9.7	K	8.3	11.0	42.2	L	9.4	56.6	27.4		10	42.9	57.2		8.8	25.2	55.2	
9.8	59.3	16.2		9.8	23.9	4.6		9.5	57.6	29.2		9.4	56.4	56.6		9.8	34.0	41.5	
9.8	59.5	34.2		9.0	42.2	3.9		9.3	49 10.3	37.9		9.1	2 22.1	59.3		9.2	34.2	56.2	
9.1	28 12.2	12.5	Sj	10	52.9	29.1		9.7	25.0	52.8		10	54.6	30.8		8.5	36.4	11.1	Sj
9.5	19.3	48.3		9.7	40 3.9	8.4		9.4	41.9	17.4		9.1	3 1.2	32.3		9.2	39.1	40.8	
9.8	48.6	27.9		9.6	5.7	34.2		9.2	43.8	14.2		7.7	13.6	50.3	K	9.8	47.1	27.5	
10	56.5	44.4		9.6	8.3	19.0		9.1	59.9	17.9		9.2	59.2	34.9		9.1	52.0	31.5	
9.1	57.7	8.6		9.9	30.2	32.6		9.5	50 12.9	15.5		9.5	4 9.4	43.3		9.5	15 8.6	42.5	
9.4	29 10.5	36.0		9.5	32.8	21.1		9.7	14.7	38.9		8.3	27.1	33.2	L	9.8	12.4	24.9	
9.5	16.1	6.2		9.6	34.1	53.3		9.4	31.2	31.8	B	9.5	46.5	47.0		9.8	21.4	31.7	
9.5	16.9	2.2		8.9	45.6	39.5	K	9.1	34.5	22.8	K	9.1	49.0	55.6	M	9.1	21.9	53.7	Sj
9.4	40.2	35.2		9.5	47.4	14.1		9.5	41.6	14.3		9.4	59.4	1.1		9.4	55.0	0.8	B
9.0	43.6	30.0		9.8	52.6	32.1		8.5	46.7	34.5	K	9.0	5 6.5	23.8	K	9.6	16 9.0	27.2	
9.8	51.0	3.6		9.2	41 25.3	39.6		9.7	54.9	19.4		9.9	10.8	47.0		9.2	46.4	43.4	
9.8	55.3	52.0		9.7	46.7	39.6		9.4	51 0.2	47.0		7.5	21.8	26.4	K	9.8	17 41.9	57.1	
9.3	58.8	48.3		9.0	47.5	22.4	K	9.9	14.7	15.6		9.7	32.8	17.8		9.8	46.7	31.2	
9.8	30 14.3	37.8		9.0	49.2	35.3	M	9.5	36.2	14.6		9.7	44.3	42.3		8.9	56.4	2.0	
8.7	23.7	56.7	Sj	9.6	57.5	45.9		9.5	52 0.1	6.8		9.7	6 41.8	5.3		8.2	18 12.7	47.6	Sj
9.8	29.3	37.0		9.4	58.7	34.6		8.8	7.0	25.7	K	9.2	44.5	53.7		9.1	14.1	58.0	
9.8	41.2	49.2		5.7	42 4.0	54.6	L	9.8	18.6	52.2		9.8	45.1	23.6		9.8	33.4	53.8	
9.4	45.3	58.9		9.5	22.8	11.6		9.7	23.6	50.8		9.3	53.5	7.4		9.3	34.6	41.1	
9.3	57.9	18.9		9.5	30.9	19.1		9.6	27.5	25.7		9.8	7 3.4	41.1		9.9	36.9	39.8	
9.5	31 2.8	16.4		8.5	32.3	38.2	L	9.4	32.3	1.4		9.5	4.4	45.1		9.8	19 9.6	17.5	
9.4	19.6	53.3		9.5	43.2	49.4		9.5	53 12.0	4.0		9.1	6.5	19.4		9.0	21.1	45.1	
9.8	27.4	54.0		9.4	45.6	52.2		9.6	27.6	37.8		9.0	15.9	54.8	M	9.5	26.4	30.2	
9.1	33.9	39.2	K	9.8	51.5	26.1		9.0	54 2.8	14.9		9.8	35.0	9.0		8.6	32.8	36.9	M
9.1	40.9	50.1		8.1	56.3	12.1	K	7.7	5.2	47.7	L	8.8	35.4	28.7	K	10	33.7	13.1	
8.6	47.7	31.7	K	8.9	43 15.9	18.7	K	9.4	23.8	43.3		10	8 47.7	40.3		9.8	48.0	7.2	
9.6	32 22.0	51.0		9.2	25.2	47.8		9.0	28.8	14.1		9.8	52.0	5.2		9.6	50.5	10.1	
9.4	32.7	54.6		8.9	27.4	57.4	K	9.3	41.7	56.8		8.3	9 14.6	5.2	K	9.2	53.3	13.7	K
9.8	44.9	12.9		9.8	44.8	55.5		9.0	45.1	4.2	K	9.0	44.9	55.5		9.5	58.7	52.3	
9.5	33 13.1	8.2		9.7	46.5	41.9		9.0	52.9	51.3		9.4	46.5	43.4		9.0	20 1.0	14.4	K
8.9	22.7	13.3	Sj	9.8	48.2	32.6		8.2	55.4	21.6	L	9.5	48.4	26.6		9.5	17.0	3.9	B
9.3	40.0	33.5		9.4	44 5.5	1.5		9.4	55 1.0	39.5		9.0	51.9	56.4		9.6	44.4	49.6	
9.0	41.1	5.3	K	8.1	19.8	44.4	K	9.2	23.4	23.4		9.4	10 21.2	56.8		9.5	56.9	11.5	
9.9	50.5	50.8		10	21.9	14.7		9.8	29.0	46.9		9.3	21.5	20.7		9.6	59.1	56.0	
9.5	34 7.6	27.5		9.4	31.8	59.4		8.9	40.7	42.5	K	9.4	33.0	8.5		10	21 10.2	4.8	
9.1	26.8	15.2		9.8	34.1	5.5		9.5	48.1	1.2		9.3	33.9	57.1		9.8	12.0	21.3	
9.8	31.7	56.9		9.5	45 0.0	7.6		10	51.3	36.1		8.2	36.7	46.7	K	9.0	25.7	30.4	
7.5	51.4	32.1	K	9.8	0.3	29.6		9.9	52.3	40.1		9.6	11 15.6	30.5		9.3	43.5	54.5	
9.4	55.2	11.2		9.1	10.2	43.5		8.9	56 10.8	47.5	K	8.8	31.9	32.4	K	9.2	46.4	31.7	

2871 = —1° 2251

2901—2960				2961—3020				3021—3080				3081—3140				3141—3200			
	9h	—2°			9h	—2°			9h—10h	—2°			10h	—2°			10h	—2°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
5.0	21 47.9	7.4	K	9.5	36 10.9	22.8		9.8	51 6.1	6.7		10	3 1.2	24.9		9.3	19 7.5	49.9	
8.3	49.2	7.0	K	8.5	15.4	42.2	M	8.3	11.3	56.6	M	9.6	9.3	42.3		9.2	11.8	24.8	
9.4	52.9	23.5		10	53.3	57.0		8.5	37.9	51.6	Sj	10	10.5	21.8		8.5	39.7	19.0	K
7.3	59.4	31.9	K	8.8	37 3.9	32.8		7.0	41.4	19.4	K	9.6	4 11.7	33.8		9.3	40.4	38.0	
8.8	22 14.4	16.5	M	9.1	58.9	12.7	M	9.4	44.0	19.7		9.8	13.6	24.0		9.0	47.3	17.0	K
7.8	17.4	29.0	K	9.7	38 12.6	46.6		9.1	50.9	7.3		10	46.5	15.5		9.9	20 1.2	21.7	
9.3	28.7	16.1	M	9.7	13.1	42.9		9.6	56.1	24.8		9.5	51.2	40.4		8.3	13.6	46.8	
9.7	43.2	57.2		9.8	18.9	28.1		7.5	57.4	22.7	K	9.8	52.7	49.2		10	41.1	56.0	
9.4	58.4	24.1		8.8	32.5	22.9	K	9.6	52 31.3	43.6		9.8	5 14.4	5.7		9.1	43.8	45.3	
9.4	23 26.4	17.6		8.3	38.9	26.5	K	8.5	34.2	45.5	K	9.6	51.7	50.7		10	21 16.1	46.9	
9.8	38.4	25.7		9.5	49.1	54.8		9.2	53 23.9	15.0		9.8	6 23.2	31.9		9.3	30.6	15.6	
9.6	40.1	34.3		9.0	50.4	3.2	M	6.8	39.1	29.8	K	9.6	26.1	27.8		9.5	42.0	37.6	
9.5	40.4	41.3		9.6	39 9.0	1.2		9.8	42.3	33.4		9.6	29.2	31.2		9.2	51.9	28.4	
9.8	40.9	25.9		9.8	10.2	25.0		9.3	57.4	8.1		9.1	44.7	1.3	R	8.7	54.1	47.3	Sj
9.8	45.1	51.9		9.3	16.2	13.2		9.2	54 7.8	23.1		9.5	55.8	0.0		6.0	22 5.9	0.1	K
7.2	24 0.0	41.2	K	8.6	21.1	51.6	K	8.8	14.9	12.4		9.2	7 14.0	20.2		9.8	15.6	41.1	
7.5	28.4	45.2	Sj	7.5	23.7	32.2	K	9.5	31.4	43.9		7.8	21.4	8.9	K	9.7	39.0	38.0	
9.4	33.5	55.3		9.2	27.4	51.5		9.4	31.9	21.5		9.2	35.0	21.1		10	39.1	8.0	
7.8	53.0	52.9	K	8.2	36.4	41.9	K	8.8	43.3	52.8	Sj	9.0	36.1	27.2	M	10	41.1	54.2	
9.9	25 26.5	33.6		9.6	40 13.8	47.4		9.8	55 3.9	34.0		9.3	37.3	45.3		8.6	50.6	57.5	L
9.6	34.0	40.9		9.9	22.9	29.6		9.8	33.9	12.6		9.7	38.3	45.9		9.0	58.9	30.0	
9.2	34.4	50.5	M	9.2	25.9	36.7	M	9.1	35.9	18.6	K	10	53.5	21.6		9.8	23 15.6	8.3	
9.7	43.2	10.7		9.4	29.9	10.6		9.4	41.9	18.2		9.8	8 45.8	43.7		9.6	36.5	35.5	
8.3	26 54.1	30.4	K	9.2	29.9	30.7	M	8.8	56 16.0	4.3	M	9.6	51.0	17.9		10	24 6.0	50.7	
7.0	27 14.4	50.8	Sj	9.1	41 10.4	36.3	M	7.8	18.9	47.0	K	10	9 1.4	10.7		8.5	11.6	7.5	L
9.4	28.9	0.6		8.4	23.5	2.4	K	9.4	20.8	39.2		9.1	10.7	6.3	R	9.7	16.1	8.6	
9.8	38.1	40.1		9.4	43.8	59.1		10	40.3	22.8		9.8	23.1	24.6		9.4	44.4	44.9	
8.3	57.4	37.3	K	9.5	42 10.4	55.4		8.5	57 15.4	0.2	G	7.7	25.7	4.4	K	9.7	25 4.4	44.7	
9.9	28 2.9	56.5		9.8	34.8	56.6		9.5	35.8	18.8		9.5	51.7	41.5	K	9.2	26.5	37.7	
9.8	13.5	3.9		9.8	38.4	2.2		9.5	35.9	32.1		8.2	10 11.5	48.7	K	9.4	32.0	2.7	
8.8	17.4	19.3	M	9.9	52.9	21.1		9.5	37.0	4.7		8.8	57.9	42.9	M	9.8	26 5.4	4.0	
9.8	26.3	58.4		9.2	43 48.7	23.2		7.0	52.3	48.9	Sj	9.4	11 32.1	9.1		9.6	27.4	47.3	
9.6	27.4	50.2		8.9	44 17.4	12.1		7.4	58 0.5	40.4	K	9.8	43.5	32.5		8.8	58.5	57.0	K
7.5	29 7.5	7.9	L	9.3	56.6	47.9		9.3	4.2	14.5		9.8	55.6	47.6		9.8	27 47.7	49.9	
8.9	7.9	39.6		8.8	45 8.4	18.8	Sj	9.4	9.6	14.4		9.7	59.9	58.9		9.9	57.0	5.5	
9.0	13.9	34.1	M	9.4	14.3	21.9	M	9.7	12.9	25.5		9.5	12 9.2	44.2		9.5	28 1.1	13.9	
9.2	41.0	21.3		9.0	22.8	16.5	M	9.2	21.7	50.9		9.2	13.8	44.2	Sj	8.8	3.9	17.3	
9.6	30 19.3	46.4		9.5	37.9	17.9		9.9	28.7	18.7		8.6	16.3	58.6	K	9.1	41.6	15.1	
6.0	26.2	31.1	Sj	9.8	39.9	0.5		9.8	29.7	54.4		9.4	33.7	12.9		9.0	45.9	36.3	K
9.0	28.1	32.1	K	9.6	53.8	59.9		9.7	43.1	13.9		9.4	36.0	59.9		9.6	48.3	45.6	
9.3	37.0	6.1		9.8	46 0.7	28.0		9.7	47.0	57.7		9.4	13 0.6	10.0		9.0	29 53.2	19.1	
9.4	50.4	34.0		9.8	1.9	12.6		9.2	59 8.7	39.5	M	10	34.5	42.9		9.7	30 11.0	41.9	
9.4	31 7.8	49.8		8.8	20.4	8.5		9.5	9.2	25.3		9.3	14 3.9	27.6		9.1	19.4	30.5	
8.3	10.0	16.4	L	9.8	36.3	59.7		9.3	14.9	17.7		9.8	25.8	22.4		9.4	28.4	34.3	
9.8	31.9	26.5		9.3	45.6	52.3		9.9	17.8	21.3		9.7	40.3	58.0		10	31 3.6	12.7	
7.3	43.4	10.8	K	9.8	59.3	44.3		9.9	25.7	29.0		9.9	55.1	37.0		9.7	19.6	14.2	
8.7	55.4	42.1		9.5	47 5.3	3.1		7.6	38.5	34.6	K	9.3	15 0.8	22.4		10	53.4	4.3	
8.3	32 1.5	1.0	K	9.2	5.9	41.6		9.7	0 57.7	57.0		9.7	23.6	8.2		9.1	59.2	21.1	
8.8	8.0	20.6		9.6	8.9	33.2		7.5	1 10.6	46.3	K	9.8	44.8	21.1		9.5	32 1.4	35.8	
9.3	17.4	33.3		9.8	23.1	59.9		10	15.1	59.8		9.4	16 8.7	15.3		9.2	13.1	20.5	
9.8	33.5	4.7		9.9	30.7	23.1		10	20.3	35.3		9.4	11.6	49.7		9.7	27.0	46.4	
9.5	33 32.4	38.0		9.3	43.3	42.0	Sj	9.4	25.5	18.6		6.7	12.2	54.7	K	9.9	27.9	34.8	
9.5	36.4	30.9		9.6	48 14.9	0.6		9.9	38.9	11.5		8.9	13.4	18.6		9.8	53.7	17.0	
9.1	34 18.5	58.4	Sj	9.5	31.7	33.2		9.8	49.1	24.6		9.7	32.7	39.8		9.4	33 14.5	59.2	
9.4	39.3	57.7		9.4	33.2	33.4		9.2	2 13.2	29.4		9.8	17 6.4	29.1		10	32.8	53.7	
10	35 10.5	48.4		9.4	49 32.9	25.7		9.5	36.4	7.0		9.7	12.4	43.6		9.4	36.0	2.6	
9.3	42.2	42.4		9.0	55.9	54.6		9.5	49.1	25.8		9.2	24.2	50.8		9.9	53.8	24.4	
9.0	42.4	14.3	M	9.8	50 17.4	25.1		9.2	51.6	41.8	M	8.8	34.8	47.2		9.4	54.4	34.9	
10	55.5	53.3		9.5	28.9	25.6		9.3	52.5	22.0	M	10	42.1	41.8		9.1	34 4.0	37.1	
9.5	36 8.1	52.0		9.3	34.4	7.8		10	3 0.8	20.7		9.8	18 46.2	55.1		10	14.4	0.5	

2999 = —1° 2315 3048 = —1° 2341 3155 = —1° 2395

3201—3260					3261—3320					3321—3380					3381—3440					3441—3500				
	10h		−2°			10h—11h		−2°			11h		−2°			11h		−2°			11h—12h		−2°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.8	34	34.4	34.4		9.1	51	44.4	46.2		10	11	46.1	4.0		9.5	29	30.1	25.1		9.8	49	9.5	30.7	
9.7		42.3	40.1		9.9	52	17.3	16.7		9.0		59.5	0.2		9.5		53.7	16.1		9.8		10.3	22.6	
9.6		54.5	58.7		10		21.0	30.5		9.4	12	11.1	3.3		8.0	30	1.4	5.2	Sj	9.9	50	18.7	48.1	
8.9	35	47.1	48.0		7.3		39.0	41.8	K	10	13	5.7	14.9		8.9		9.0	49.6		9.6		41.2	6.7	
9.9		57.4	0.4		9.6	53	8.2	4.4		8.5		8.1	6.3	Sj	9.4	31	55.5	12.8		10	51	31.8	58.7	
9.5	36	13.6	11.4		9.8	54	21.8	16.9		9.8		33.3	59.4		9.7	32	13.1	43.5		7.3		49.4	30.9	K
8.6		24.3	25.9	K	8.9		26.7	9.5	K	10		37.8	21.4		9.2		20.8	11.5	M	9.2	52	9.0	42.5	
8.8		31.7	17.0	K	9.4		41.2	42.8		8.7		44.3	58.1	K	9.4		27.3	11.2		10	53	5.9	4.1	
9.5		51.4	30.3		9.6		49.4	48.3		9.6	14	28.3	53.4		8.9		44.3	11.2	Sj	8.8		17.2	7.8	Sj
9.8	37	25.3	42.7		6.7	55	14.4	44.1	K	9.0		34.6	48.1	K	8.5		52.1	30.9	K	8.7		43.3	45.6	M
9.7		49.7	8.2		9.4		17.1	34.9		9.5	15	26.1	4.0		9.1	33	26.3	52.0		9.5	54	19.2	53.5	
9.0		57.8	31.3	M	9.0		34.8	35.8	K	9.1		35.9	30.8		9.6		48.2	19.3		9.5	55	32.9	4.9	
10	38	36.4	45.8		9.8		34.8	1.6		9.7		38.6	10.5		9.4		52.2	30.7		7.7		48.3	35.2	K
10		49.3	54.3		9.4		36.3	35.6		10		42.2	11.5		9.9	34	25.2	13.7		8.8	56	51.2	1.6	M
9.6		56.3	15.7		9.8		41.2	10.6		9.2		42.7	0.0		9.0		37.2	13.9		9.5		58.5	21.2	
9.7		59.6	40.3		9.2		44.6	40.4		9.4	16	4.7	53.9		9.3		49.7	23.1		9.2	57	11.8	34.8	
10	39	25.9	22.5		10		54.7	27.8		8.3		9.9	29.4	Sj	9.0	35	5.7	10.6	Sj	9.5		41.0	20.6	
9.8		28.3	19.5		8.5		56.8	16.4		9.7	17	1.7	51.2		9.3		24.0	34.5		9.9		44.0	21.5	
10	40	11.1	36.5		10	56	3.5	28.0		9.2		32.2	14.9		7.2		25.2	44.4	K	9.3	58	31.5	57.9	
9.3		37.0	33.2		9.0		14.9	25.5	K	9.8		35.8	57.1		9.4		51.7	43.1		6.5		34.5	19.2	K
8.0	41	9.5	28.9	K	9.5		29.5	43.7		9.5		59.1	43.7		9.5	36	54.7	50.1		10		48.1	46.0	
9.9		10.6	51.8		9.7		35.5	59.5		8.7	18	5.8	25.6	K	10		55.1	2.2		9.5		57.6	45.4	
8.9		13.3	40.3		8.5	57	19.2	11.6	K	9.3		23.6	10.6		9.5		55.9	23.7		9.0	59	29.2	48.5	M
8.9		22.2	54.9	M	9.7		35.7	45.7		9.7		35.0	21.3		9.5	37	0.5	25.3		9.5		40.9	7.0	
9.5		31.3	12.9		9.6		41.3	19.5		9.5	19	21.2	14.9		9.7		7.0	10.5		9.8	0	12.1	44.8	
9.8		38.8	49.5		9.4	59	1.6	2.8		9.2		23.1	10.7		9.3		34.7	19.6		8.3		23.5	18.8	Sj
8.5		54.4	0.5	G	8.8		27.4	41.0	M	9.6		32.3	58.2		9.1		38.9	6.6	Sj	9.5		39.0	14.3	
9.0	42	10.8	13.9		9.5		32.8	56.2		10		39.6	7.1		9.8	38	23.8	49.2		10		42.9	7.7	
9.1		13.1	37.1		9.0		45.9	32.4	M	8.9		54.5	45.4		9.6		43.9	0.8		9.0	1	3.0	40.5	M
8.6		45.5	25.9	K	10		56.5	36.4		10	20	52.9	25.9		7.3		54.8	11.7	Sj	9.4		3.6	10.9	
10		51.7	12.8		10	0	6.5	39.6		9.9		59.0	38.7		7.2	39	15.6	56.2	L	9.5		26.4	28.4	
9.5	43	8.0	31.6		10		24.2	47.6		9.1	21	7.4	28.6	M	9.5		36.9	0.5		9.4	2	46.1	57.6	
9.7		22.5	51.9		10		41.1	8.3		8.8		15.7	34.2	Sj	9.6		51.0	35.3		9.7	3	9.5	49.2	M
9.8		38.2	51.9		9.8	1	15.2	37.6		9.4		15.9	31.1		8.8		57.1	17.0	M	8.8		27.0	20.2	M
9.8		40.4	42.7		9.5		51.5	39.4		9.8		19.2	50.3		9.1	40	23.9	53.7	M	10		47.0	35.3	
6.0		42.9	19.2	K	9.9		59.0	7.4		9.1		41.1	6.1		9.5		30.7	12.4		9.5		54.5	55.4	
10		53.1	42.2		10	2	4.4	38.0		8.8		58.9	55.2	M	7.7	41	1.5	25.5	Sj	9.3		56.6	24.4	
8.7	44	21.2	53.8		8.8		20.6	12.3	M	9.1	22	14.2	11.6		9.5		18.2	36.7		6.7		56.8	58.1	Sj
9.1		25.7	46.5	K	9.9		29.0	45.9		9.9		45.7	17.7		9.5		18.4	22.4		9.0	4	41.5	50.4	K
10		55.4	56.1		9.9	3	0.3	19.4		5.0		54.3	12.2	K	8.8		52.0	30.7	M	10		52.1	45.6	
8.3	45	34.8	16.8	K	9.0		23.8	56.1		9.4	23	0.4	28.2		9.8	42	3.2	11.9		7.3	5	8.0	17.5	K
9.0		39.4	21.4		9.6	4	11.7	19.2		9.3		5.0	40.7		9.9		5.9	38.7		10		11.9	8.6	
9.2	46	28.7	4.7		9.4		20.0	46.4		8.8		38.9	8.9	Sj	9.5	43	48.5	29.2		9.5		46.2	46.3	
9.7		33.3	54.6		10		39.8	57.2		8.5	24	42.4	44.1	Sj	9.5		51.0	49.1		9.3		52.3	34.5	M
9.5		33.7	7.4		9.2	5	1.2	14.1		9.5		43.2	44.2	K	9.9		58.4	36.0		10	6	53.5	34.2	
9.4	47	8.2	2.1		9.9		32.1	52.2		9.6	25	2.7	45.9		9.7	44	14.7	0.9		10	8	36.9	6.4	
8.3		26.6	4.6	Sj	9.1	6	19.4	59.1	Sj	9.7		33.3	41.2		9.8		24.0	8.8		8.6		42.1	12.6	K
9.7	48	25.9	58.9		10		50.3	59.7		9.6		34.2	5.5		9.7		26.0	46.7		7.8		50.9	25.7	K
9.5		26.7	8.7		9.3	7	14.7	15.9		9.3		52.0	15.4		9.8		43.1	38.1		9.2		54.4	55.9	M
10		29.9	22.8		10	8	7.5	40.4		9.3	26	12.4	44.4		9.8		43.5	3.2		9.7		55.7	53.3	
8.3		36.2	6.7	K	9.1		28.6	3.1		10		16.6	16.8		9.5	46	9.0	11.8		10	9	42.9	1.9	
9.6	49	2.2	4.2		7.7		47.9	40.9	Sj	9.4		28.7	18.3		10		9.8	45.2		8.7		59.4	29.9	K
9.2		23.9	56.9	M	8.7		55.1	58.3		8.8		57.8	42.2		7.0		26.9	58.0	Sj	9.3	10	45.5	13.3	
8.7		28.7	10.1	K	9.0	9	11.2	51.1	K	9.5	27	50.4	3.9		9.5	47	8.9	35.8		8.3	11	8.5	13.3	L
9.4	50	7.8	17.4		4.9		16.9	51.0	K	9.5	28	18.3	51.9		9.4		9.7	36.9		10		11.7	58.2	
9.9		18.1	5.4		9.5		18.2	14.0		9.1		29.6	18.7		9.3		22.1	16.6		9.1		15.5	47.9	
9.5		23.2	9.1		9.8		55.0	0.4		9.8		42.8	5.9		9.5		49.1	18.4		8.3		48.1	30.9	K
9.5		45.5	34.9		9.4	10	23.2	50.2		8.9	29	7.0	46.8	M	8.3		50.9	38.2	L	9.4		50.4	29.3	
8.5		49.7	42.5	Sj	9.8		27.4	29.7		9.4		11.3	52.4		8.3		58.3	47.2	Sj	10	12	3.6	44.5	
10	51	11.9	22.8		9.2		36.3	24.1		9.3		14.3	10.3		9.4	48	19.0	29.5		9.2		48.5	40.0	

3227 = −1° 2448 3412 = −1° 2569 3426 = −1° 2579 3481: 8ʰ09 17′32″.9 B_3, Ep. 1872.09
3491 = −1° 2640

3501—3560

m	12h m	s	—2° ′	
9.8	12	54.1	12.2	
9.5	13	8.7	1.2	
9.4		23.5	48.7	
9.8		38.5	9.8	
9.5	14	1.7	44.3	
9.5		45.4	58.6	
10		48.9	14.0	
10	15	14.6	52.1	
10		35.7	49.7	
8.9	16	9.8	52.6	M
9.4		29.0	14.2	
9.4	17	5.2	41.9	M
9.5		8.0	31.4	
10		27.6	3.7	
10		36.0	25.6	
9.3	18	8.6	12.4	
9.0		16.0	18.7	K
9.5		27.3	31.3	
8.0	19	33.5	44.0	K
8.3		44.3	28.9	K
9.5		49.0	50.5	
9.5		52.0	25.1	
9.2		53.9	26.2	M
9.1	20	9.9	30.9	K
9.8		15.7	58.6	
9.5		47.9	7.7	
9.6	22	19.2	1.2	
8.5		19.6	30.9	L
9.3		45.7	58.9	
9.9	23	49.8	44.0	
8.6	24	15.0	54.7	M
9.1	25	14.6	20.6	
8.0	26	45.9	55.2	B
9.2		49.9	53.7	
9.4	27	41.0	34.8	
10		44.3	20.9	
9.5		50.4	43.6	
9.2		56.3	25.2	
10	28	0.3	2.2	
8.0		1.4	44.7	B
9.1		12.3	13.0	K
8.3		17.3	13.0	K
10		19.8	22.0	
9.4		53.3	9.1	
9.5	29	54.3	41.0	
8.6	30	5.9	46.3	Sj
9.5		30.5	28.5	
9.2		51.4	19.9	
8.5	31	21.0	30.6	K
9.5		27.4	25.3	
9.5		59.4	43.6	
7.8	32	27.2	16.1	K
9.0		30.7	6.5	
10	33	2.8	54.1	
10		15.4	14.1	
9.5		19.4	35.3	
9.6		41.9	37.1	
9.8	34	0.9	8.5	
9.5		10.4	30.5	
9.8		20.3	57.7	

3561—3620

m	12h m	s	—2° ′	
9.5	34	23.0	5.3	
9.7	35	19.4	22.6	
9.0		45.7	10.1	K
8.8		57.3	4.5	K
10	36	9.4	17.8	
9.7		24.4	9.8	
6.8		43.7	2.9	K
10		55.5	55.3	
10		56.4	12.9	
10	37	1.9	58.3	
9.7		48.7	57.4	
9.5	38	15.4	35.1	
9.0		27.7	14.4	R
9.7		34.4	14.2	
10	39	22.4	27.1	
10		39.4	10.1	
10		41.4	44.9	
10	40	14.4	28.5	
9.9		18.1	40.9	
8.7	41	42.8	54.4	K
10		50.4	24.5	
9.8		52.5	40.9	
10		53.4	22.7	
9.5	42	22.2	14.1	
9.5		38.4	26.4	
9.7		42.4	40.2	
8.5	43	16.3	55.3	K
9.9		18.6	52.1	
9.0		51.7	6.5	R
10	44	10.5	54.0	
9.0		37.9	36.5	
8.8		53.4	54.5	K
6.2	45	45.5	46.0	Sj
9.5	47	46.4	30.8	
10		47.4	43.3	
8.9		48.7	49.3	M
7.9	48	13.1	46.2	Sj
9.3		32.1	26.9	
10		43.5	36.6	
10	49	2.4	15.6	
9.0		3.7	48.6	K
10		39.4	24.5	
10	50	2.3	49.5	
9.7	51	5.3	26.4	
7.2		12.2	7.2	Sj
8.5		22.1	45.1	K
8.9		30.4	52.3	K
9.4	52	24.0	18.5	
6.3	53	7.4	35.2	K
9.4		59.3	12.2	
9.9	54	8.7	28.6	
10		9.6	53.6	
9.5		11.9	30.2	
9.2		20.3	32.0	M
9.6		37.4	31.8	
9.4		44.3	32.5	
8.5	55	32.5	22.5	L
10		33.3	38.5	
10		44.2	1.4	
8.8		49.9	10.9	M

3621—3680

m	12h—13h m	s	—2° ′	
7.5	56	25.5	26.3	Sj
6.7		26.5	52.9	K
9.5		28.3	35.4	
9.5	57	5.0	52.2	
9.8		30.3	22.5	
10	58	48.6	52.2	
9.2	59	32.0	29.5	
9.1		37.9	31.5	
9.5		50.3	22.0	
9.3	0	12.3	56.9	
9.8		15.9	32.7	
9.7		16.7	53.6	
10		52.3	23.8	
8.7		58.0	1.2	K
9.4	1	30.7	54.2	
9.5		36.1	57.0	
9.4	2	3.5	26.1	
8.3		15.4	36.6	K
9.3		25.3	12.1	
10		35.4	5.8	
9.2		49.0	40.9	M
8.7	3	15.4	30.8	M
10		32.6	54.3	
9.0	4	30.7	14.4	K
9.4		35.7	12.2	K
10	5	16.7	7.7	
9.3		28.7	5.4	
10		35.8	49.6	
9.1		43.2	17.2	K
9.4		45.0	24.1	
7.5		52.1	43.1	K
9.8	6	28.3	53.2	
8.2		36.7	2.1	K
9.9	7	1.6	45.2	
10		12.3	13.2	
10		21.3	8.7	
9.4		32.5	28.1	
9.3		42.7	14.0	
8.6	8	30.1	20.0	K
9.4		37.2	35.3	
9.4		46.5	27.5	
9.1	9	54.1	13.1	K
9.4		57.6	49.2	
9.9	10	17.6	15.9	
9.5		31.3	46.7	
9.3	11	32.0	41.0	
9.5	12	31.1	17.1	
9.8		42.0	56.9	
9.4		51.0	13.7	
9.1		58.7	43.9	M
8.9	13	13.0	46.6	Sj
9.8		19.1	35.3	
9.8		29.1	53.5	
9.2		29.5	30.6	
9.8	14	17.3	52.1	
9.5	15	25.5	52.5	
9.3		27.2	10.2	
9.4	16	6.6	57.5	
9.6		7.6	47.2	
9.8		31.9	26.8	

3681—3740

m	13h m	s	—2° ′	
10	16	59.6	7.5	
9.7	17	52.5	3.9	
var	18	32.9	37.6	B
8.0		39.4	54.1	K
10	20	9.5	0.8	
var		19.2	25.1	B
9.7		27.1	41.4	
9.5		43.0	55.0	
9.0	21	48.8	12.6	Sj
9.5	22	3.7	18.9	
10		10.5	3.1	
10		24.6	47.8	
9.4		54.5	28.9	
9.6	23	20.4	36.0	
7.3		22.7	18.2	K
10		26.5	1.8	
8.9		30.7	45.7	K
8.5		32.9	3.9	L
9.6		58.5	45.5	
9.9		59.6	46.5	
8.7	24	41.7	20.7	Sj
9.0		42.4	22.5	K
8.5		47.0	49.0	K
9.5	25	28.9	33.7	
9.9		42.7	59.1	
9.2	26	3.8	10.9	L
9.4		10.8	50.6	
8.7		32.8	8.0	K
9.5	28	29.6	24.5	
9.2		40.7	44.7	
8.7		50.8	11.8	K
10	29	5.7	54.2	
9.5		31.8	14.1	
6.8	30	17.5	29.5	K
9.4		57.7	16.9	
8.5	31	0.6	58.0	Sj
9.9		3.1	49.1	
9.1		36.5	29.8	K
9.8	33	42.6	22.1	
9.4	34	14.1	29.0	
9.5		21.6	11.1	
9.4	35	47.2	59.9	
8.5	36	9.4	47.5	K
9.4		23.5	31.4	
10		29.5	43.4	
8.7	37	14.7	48.4	L
8.2		39.9	34.9	Sj
9.1	38	3.2	17.2	L
9.4		24.6	47.5	
9.5		35.5	6.4	
9.1		58.3	6.8	Sj
8.9	40	25.5	26.4	K
9.7		42.4	5.5	
10		44.1	50.0	
9.5		45.9	53.8	
9.6		49.0	47.6	
7.5	41	9.4	6.6	Sj
8.9		9.9	50.1	M
9.0		17.6	27.2	L
9.5		43.7	17.3	

3741—3800

m	13h—14h m	s	—2° ′	
9.7	42	2.6	11.3	
9.3		4.7	19.5	K
9.7		11.3	49.6	
9.4		22.8	0.4	M
9.6	43	23.3	41.9	
9.5		36.0	11.3	M
8.4		37.3	4.6	Sj
9.3		37.9	36.3	
9.3	44	20.9	57.5	Sj
9.4		24.2	13.3	M
9.2		32.0	45.8	
7.3	45	41.2	49.4	K
9.4		58.0	42.9	
9.8	46	0.1	51.7	
10		32.5	36.1	
9.5		39.0	38.1	
10		45.2	43.3	
8.5		51.1	17.2	Sj
9.9		54.4	24.0	
9.5	47	16.3	36.4	
6.5	48	29.5	56.9	K
10		52.6	57.3	
9.0	49	14.9	30.8	Sj
10		21.5	47.1	
9.0	50	9.8	4.7	M
9.4	51	21.2	12.8	
9.4	52	7.6	18.6	
6.4		18.4	50.4	Sj
9.5	53	9.3	19.7	
9.7		34.5	46.1	
10	54	31.8	50.2	
9.0	55	6.0	24.9	Sj
10		9.8	47.4	
9.8		23.9	33.6	
10	56	13.5	7.5	
9.6		16.7	6.4	
9.0		27.1	49.7	K
9.6		54.8	46.0	
9.0		56.5	21.7	K
9.5	57	30.0	18.9	
9.5	58	27.4	32.9	
9.7		55.8	41.6	
9.2		58.0	7.2	
10	0	12.9	11.6	
9.7		15.0	34.3	
9.4		31.4	11.2	
9.5		32.6	52.0	
9.2		44.0	8.7	
8.4		51.1	50.9	Sj
8.9		53.5	14.7	K
10		56.4	19.0	
9.5	1	2.3	48.1	
9.1		22.4	54.5	K
9.5		28.1	7.8	
9.4		38.4	32.6	
10		47.9	56.1	
8.9		51.3	22.5	K
9.5	2	12.8	41.5	
9.0	3	21.8	25.1	
8.0		48.4	38.7	Sj

3527 = —1° 2676 3546: 5h58 46′14″4 B_4, Ep. 1872.80

3801—3860				3861—3920				3921—3980				3981—4040				4041—4100			
	14h		—2°		14h		—2°		14h—15h		—2°		15h		—2°		15h		—2°	
m	m	s	′		m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.0	4	15.0	11.4	K	9.1	26	39.1	22.4	K	9.0	51	10.6	18.0	Sj	9.8	14	28.9	36.7		9.4	37	21.5	4.4	
8.0	5	1.3	17.0	K	8.5	27	1.9	31.8	K	9.4		11.2	57.6		9.5		33.1	4.2		9.8	38	51.9	29.7	
9.9		6.3	58.6		9.3	28	23.7	49.3	M	8.3		58.1	33.4	K	9.5	15	0.9	57.7		9.5	39	9.8	57.7	
7.8		15.5	37.1	K	10	29	38.4	59.6		10	52	1.7	40.2		9.4		28.9	55.6		8.2		43.9	9.7	K
9.4	6	16.4	14.3		9.6		40.4	53.1		9.5		28.1	2.4		8.6		37.1	44.9	K	9.8	40	14.0	7.8	
9.1		17.8	19.8		9.7		53.2	30.0		9.0	53	13.1	22.7	M	9.5		39.2	14.9		9.4		20.0	9.3	
9.8		47.4	37.0		9.5	30	9.6	28.3		9.0		30.6	17.5	Sj	9.1		42.1	46.8	K	9.0		50.9	30.8	M
10	7	1.0	43.4		8.5		14.9	44.5	K	5.0		47.3	10.0	Sj	9.5		46.0	15.5		9.5		51.1	14.4	
8.7		4.0	29.0	K	9.4		20.0	15.5		9.3		53.5	38.4		10	16	26.0	46.0		9.8	41	7.7	44.0	
8.4		25.1	56.8		9.7		33.2	13.7		6.5	54	3.0	35.0	L	9.8	17	27.1	53.6		9.5		24.0	12.6	M
9.0		45.2	46.0	Sj	9.8		52.0	9.4		8.6		23.0	27.4	M	9.8	18	9.9	11.5		8.2		37.9	47.1	Sj
6.4	8	58.9	31.2	K	9.0		53.9	14.0		9.8		48.4	5.1		8.2		35.3	27.7	K	3.8	42	2.9	58.8	K
9.1	9	14.1	12.9	M	7.0		56.8	58.8	Sj	7.0	55	13.2	27.3	K	9.4		52.9	23.4		9.4		30.4	25.1	
10		19.5	1.9		8.0	31	0.6	30.9	K	9.1		18.5	17.4		9.6	19	28.8	3.8		9.0		31.3	44.2	K
9.8	10	3.7	50.0		9.6		41.5	10.2		8.6		19.1	1.5	K	8.1		46.9	31.3	K	8.5		49.9	36.5	K
9.6		37.9	10.4		9.6		47.6	43.1		8.9		30.7	22.8	K	9.7		53.0	54.3		9.7		54.5	21.0	
9.8		40.3	2.7		9.5		51.6	29.2		8.5		56.1	36.2	K	9.8		53.2	31.8		9.6	43	21.2	46.5	
9.4	11	23.9	9.1		9.5	32	29.6	20.7	M	9.5	56	23.0	46.8		9.3	20	9.9	14.6		5.6		42.8	39.0	K
9.8		25.0	39.2		9.2		32.0	9.8	Sj	9.6		28.8	17.1		10		17.9	16.3		10		53.7	10.5	
9.2		35.2	53.0	M	9.5	33	4.9	23.5		9.2	57	18.9	54.1	K	9.0		44.6	38.9		9.2		57.1	9.6	Sj
9.5		38.4	5.3		9.7		17.7	41.3		9.2		50.5	37.7		9.0	21	6.7	3.6	M	9.4	44	20.6	30.7	
9.6		38.8	19.6		8.2		29.1	13.6	K	9.8	58	20.2	7.1		9.8		18.4	21.0		10	45	46.5	29.9	
9.5		55.0	5.3		9.1		34.4	47.2		9.4	59	0.2	3.3	M	9.6		54.2	24.8		9.8		49.1	17.0	
9.7	12	47.1	35.0		9.5		52.6	29.2		9.1		13.9	36.3	B	9.1	22	16.4	19.6	K	7.5		49.1	35.4	L
9.3	13	37.8	20.9		9.5	34	2.3	55.3		9.6		37.8	11.6		9.3		54.5	54.8		9.6		54.0	7.5	
10	14	7.2	20.0		9.0		26.4	54.1	Sj	8.8	0	2.3	0.7	K	9.2	23	2.3	29.1		9.8	47	39.5	16.8	
9.1		8.1	40.6		8.7	35	42.6	20.3	M	9.4		4.9	52.6		9.4		18.1	16.8		9.5	48	10.2	5.0	
9.7		12.0	27.5		9.0	36	29.5	50.8		9.9		19.8	59.4		9.0		58.7	14.0		9.8		14.9	52.8	
9.3		14.6	36.8		9.3		43.6	31.5		9.0		30.0	14.7	Sj	8.0	24	18.4	1.1	L	9.5		19.0	54.9	
9.9		22.6	28.1		7.4		58.7	44.9	K	8.3	1	39.4	1.4	K	9.5		20.7	38.3		9.7		39.4	54.5	
9.8		24.5	37.2		8.5	37	20.0	26.8	K	9.7		53.5	44.7		9.2		21.3	9.5		9.4		45.2	55.2	
9.5		31.6	40.5		9.4		57.6	57.2		9.8	2	18.7	14.1		9.0	25	6.8	58.5		9.8		45.8	8.5	
10		53.0	55.2		9.8	38	23.6	59.4		9.4		22.2	4.0		9.4	26	5.5	49.6		9.5		50.2	34.7	
9.7	15	3.6	14.5		8.9	39	11.0	19.3	K	9.7	4	9.0	29.4		7.9		5.5	48.8	K	9.1	49	2.7	58.0	K
9.0		6.6	31.0	K	9.5		44.0	24.1		9.4		10.6	19.7		8.0		45.2	13.9	L	9.3		13.7	45.0	
9.2		34.9	12.4		9.4		45.3	25.5		9.8		12.7	41.6		7.8		58.7	27.3	Sj	9.8		24.0	4.3	
10	16	7.4	7.3		9.1	40	15.5	46.3	M	9.4		32.1	32.2		9.7	27	28.7	41.6		8.3		29.2	33.9	K
9.4		18.8	13.1		9.7		29.3	25.9		9.5	6	20.6	7.1		8.4		31.4	50.1	Sj	9.8		48.0	52.7	
9.7		47.0	40.0		9.8		30.3	31.3		9.8		48.6	31.4		9.5		38.1	5.1		9.6	50	11.1	13.5	
9.5		53.6	32.0		9.5		59.0	17.2		6.7		55.7	49.3	K	8.8	28	38.4	17.8	K	8.7		26.3	45.4	K
9.3	17	27.9	21.6		9.3	41	31.5	40.5		9.9	7	20.4	47.5		8.3		41.0	2.2	Sj	9.8	51	5.2	45.4	
9.8		52.5	41.5		10		34.7	53.6		9.3		39.2	20.6	B	9.5		49.5	58.7		9.8		11.6	22.0	
9.1	18	14.3	20.8		9.1	42	38.5	43.3		9.0		44.7	11.5	B	9.0		55.8	54.6	K	9.8		14.5	2.8	
9.5		37.9	0.4		9.5	43	14.9	41.0		9.8		56.9	35.0		9.4	29	1.5	2.6	M	9.2		15.4	35.5	K
9.0	19	41.5	44.7		9.5		18.8	32.8		9.6	8	17.8	25.7		9.0		10.7	20.6	K	7.9		20.6	39.6	Sj
8.8		44.2	2.3	K	10		37.6	47.0		10		21.7	42.8		9.2		21.5	13.0	M	9.4		54.9	24.8	
9.5	20	3.0	6.9		8.3	44	45.2	55.1	Sj	9.5		49.4	31.0		9.3		52.7	24.2		9.7	52	2.8	12.6	
9.2		17.3	25.8		9.3	45	17.5	43.9	M	9.5	9	22.0	27.9		9.8	30	0.8	34.5		9.8		15.5	3.7	
7.3		33.0	21.2	L	9.3		51.1	6.7	M	9.3	10	10.1	42.5		9.3		28.7	21.3		9.3	53	7.7	10.0	
9.6	21	9.2	50.0		9.1	46	12.2	44.9	M	9.5		11.4	0.2		8.0	31	16.7	20.9	Sj	9.2		46.8	44.9	
9.8		19.7	56.3		9.5		39.0	15.2		9.2		29.7	54.2	K	9.1	32	48.2	3.3	K	10		46.8	40.6	
9.5		35.3	58.6		9.0		55.0	28.7		8.0	11	6.7	16.1	Sj	9.8		59.8	13.8		9.1	54	22.7	46.3	
8.8	22	36.9	54.0	M	9.2	47	40.0	9.4		9.8		51.3	19.7		9.0	33	3.3	43.8	K	8.8		31.9	56.1	K
9.6		55.5	52.4		9.3		59.5	35.2		9.1	12	21.1	44.3	K	7.9		52.9	9.9	Sj	7.9	55	15.9	3.8	K
8.0	23	11.1	27.4	K	9.8	48	52.0	31.8		9.5		36.1	42.7		9.1		56.2	1.4	M	9.5		32.1	51.7	
8.9		27.1	56.5	K	9.4	49	23.5	48.4		9.8		37.3	22.1		9.5	34	11.2	46.9		9.3		36.3	43.6	
9.3	24	9.1	53.5		9.8		36.6	45.3		8.7	13	5.3	59.4	K	9.2	35	18.4	59.6		9.9		36.9	37.7	
9.4		58.6	8.7		10	50	9.1	4.7		9.5		15.8	22.4		9.4		38.3	50.1		9.2		48.3	57.9	Sj
9.0	25	50.1	40.0		9.5		32.2	42.4		9.8		18.7	14.6		9.5		41.6	20.0		9.5		53.6	26.2	
9.0	26	16.6	0.1	Sj	9.8	51	9.5	3.1		9.0		46.4	33.3	Sj	8.3	36	46.7	32.8	K	9.4	56	18.0	47.4	

3804: 15ˢ.65 37′32″.5 B_4, Ep. 1872.37 3844 = −1° 2952 3860 = −1° 2965 3946 = −1° 3023
3950 = −1° 3026 3977: 5ˢ.18 59′32″.1 B_1, Ep. 1872.40 4009 = −1° 3064 4035 = −1° 3081
4085: 21ˢ.11 39′21″.6 B_4, Ep. 1872.44

4101—4160

m	15h—16h m	s	—2° ′	
9.8	56	37.0	18.8	
9.4		42.3	49.2	
9.1	57	9.3	48.9	M
9.8		22.5	16.4	
7.7		46.7	56.8	K
9.5	58	28.0	59.1	
9.6		42.3	24.7	
8.4		48.6	55.6	Sj
9.0		51.4	9.7	
9.0		58.1	21.4	M
8.4	59	23.9	51.3	K
9.1		38.6	27.7	
8.0	0	3.9	15.2	K
9.5		39.2	57.2	
9.9		46.0	59.6	
8.8	1	11.0	26.5	K
9.8		29.3	24.1	
9.8		56.9	39.3	
9.5	2	45.0	2.0	
9.1		46.9	2.4	
9.7		51.7	48.6	
9.8	3	6.7	37.4	
9.8		57.5	20.8	
9.5	4	6.0	22.6	
9.1		29.1	28.0	
9.5		45.0	49.1	
9.8	5	0.1	47.5	
9.7		6.2	13.5	
9.8		23.0	12.8	
8.9	6	1.6	32.9	
9.4		7.0	5.0	
9.3		33.1	2.0	
9.8		34.1	35.7	
9.0		40.4	43.0	
9.6		44.4	59.8	
9.8		46.7	42.8	
9.8		56.1	25.4	
9.8	7	1.2	49.7	
9.3		15.1	34.5	
9.8		15.9	12.8	
9.6		16.4	45.6	
9.4		25.2	58.2	
9.6		25.2	31.9	
8.5		28.7	28.5	M
9.1		51.9	4.4	
9.6	8	4.5	1.5	
9.8		40.4	32.8	
9.8	9	20.5	23.1	
9.3		45.6	56.4	
9.8		48.5	14.3	
9.8		49.3	33.5	
9.8		54.6	51.3	
9.3		56.7	59.2	
9.9	10	19.1	19.6	
9.8	11	28.2	9.8	
9.1		36.0	20.1	
9.8	12	1.0	21.5	
9.3		2.7	17.3	
9.5		2.8	31.5	
8.3		24.9	40.5	Sj

4161—4220

m	16h m	s	—2° ′	
9.5	12	30.0	15.2	
9.5		44.1	34.9	
9.4	13	11.6	58.9	
9.4		34.8	19.2	
9.5		35.6	40.6	
9.6	14	6.6	52.8	
10		19.0	22.8	
9.8		26.2	38.9	
9.4		36.6	42.8	
9.8	15	3.4	4.1	
9.4		4.9	49.5	
9.8		18.5	12.8	
10		35.8	58.1	
9.8		58.5	19.3	
9.5	16	14.4	7.0	
8.8		16.7	37.6	K
9.2		55.4	7.9	Sj
9.5	17	2.4	6.3	
7.0		5.7	8.6	Sj
8.0		20.1	7.7	Sj
9.2		20.3	1.0	
9.2		29.8	12.9	K
9.3		46.8	12.4	
9.2	18	4.6	36.1	
9.6		7.4	58.5	
9.5		20.0	18.9	
9.1	19	16.9	6.0	
9.5		19.4	33.9	
8.1		24.9	39.9	L
8.5		27.5	33.9	L
9.8		45.2	59.3	
9.9		56.2	46.0	
9.1		57.6	30.6	
9.5	20	10.0	20.0	
9.8	21	6.1	56.9	
9.8		7.1	49.2	
9.5	22	6.9	35.4	
9.9		11.3	16.4	
8.5		18.8	23.5	Sj
9.6		24.4	38.7	
9.1	23	18.2	11.7	K
9.0	24	5.5	42.7	
8.8		53.2	22.9	
9.3	25	1.6	13.5	
9.5		2.3	3.7	
9.7		11.4	31.2	
9.3	26	9.3	19.3	
9.5	27	3.4	0.1	
9.8		23.0	56.7	
9.2		39.1	41.3	
5.5	28	45.5	0.7	Sj
9.5	29	0.5	37.5	
8.5		27.0	21.9	Sj
9.0		27.8	21.0	K
9.8		39.6	41.1	
9.0		42.0	14.8	
9.1		46.1	45.0	K
9.5	30	40.5	30.6	
8.0		46.5	8.1	Sj
9.2		49.5	58.2	

4221—4280

m	16h m	s	—2° ′	
9.2	30	50.7	47.7	
9.6		58.5	24.8	
9.2	31	11.0	32.5	
9.8		25.0	11.7	
9.3		30.7	31.8	
7.3		49.1	49.0	K
8.5	32	16.5	34.1	M
9.8		42.5	3.2	
9.3	33	17.4	46.8	
7.0		34.5	33.6	Sj
9.0	34	6.5	18.7	K
9.5		9.9	3.1	
9.5	35	36.0	17.4	
8.5	36	16.0	26.8	Sj
8.0		23.2	21.3	K
9.6		29.0	2.9	
9.6		46.0	36.0	
9.6		48.5	7.1	
8.3		55.1	51.4	Sj
9.3	37	5.5	12.0	
9.5		24.7	40.0	
6.9		36.4	48.9	K
9.8		46.3	34.5	
10	38	4.3	48.8	
9.5		13.5	9.4	
7.8	39	3.1	55.6	K
9.4		25.8	13.7	
8.7		29.5	50.1	B
9.4	41	1.0	59.8	
9.8		10.5	30.2	
9.5		33.2	25.6	
9.2		37.8	59.9	Sj
9.8		49.6	4.5	
8.5		54.2	28.8	M
9.7	42	8.2	27.2	
9.7		13.8	55.3	
9.7		28.5	56.3	
9.5		34.1	55.5	
6.2		48.5	23.5	L
9.7	43	28.2	18.1	
9.7		36.1	41.5	
9.5		55.4	1.6	
8.8	44	9.0	23.2	M
9.0		14.5	31.7	
7.0		33.5	32.6	Sj
9.7		58.3	46.2	
9.6	45	2.7	46.0	
9.5		10.0	26.4	
9.5		31.5	25.3	
10		43.7	41.0	
9.9	46	9.3	59.9	
9.3		31.1	54.4	
9.5		32.6	34.5	
9.6	47	38.1	29.3	
8.1	48	2.0	13.2	K
9.5		12.1	29.4	
9.4		20.0	56.7	
9.3		31.9	55.9	
9.5		59.2	29.7	
8.8	49	15.6	12.4	M

4281—4340

m	16h—17h m	s	—2° ′	
8.4	49	33.7	47.3	K
9.1		55.5	41.0	
7.0	50	3.3	47.1	Sj
9.1	51	7.7	29.1	
8.5		17.8	46.4	M
9.4	52	2.0	56.8	
9.5		6.8	48.6	
9.6		57.5	46.4	
9.7	53	41.2	35.0	
9.8	54	10.0	50.8	
8.8		31.7	5.0	Sj
9.4	56	3.2	47.2	
9.5		11.2	39.5	
7.8		28.1	22.3	Sj
9.1		48.2	30.3	M
9.5		50.2	21.1	
9.5		59.1	10.3	
9.5		59.6	14.5	
9.0	57	36.7	34.9	
9.3	58	52.7	18.1	
8.5		57.2	23.2	Sj
8.5	59	17.2	4.7	Sj
9.4		21.2	56.1	
7.3		38.9	40.1	Sj
9.1	0	26.7	29.0	
9.5	1	57.8	24.9	
9.7	2	0.0	27.9	
9.4		34.5	40.9	
9.5		57.6	50.3	
9.5	3	31.2	9.4	
9.4		51.9	57.5	
9.3	4	46.4	44.8	
8.4	5	18.7	5.4	K
8.5	6	3.2	30.8	
9.8		6.3	53.3	
9.8		16.2	33.2	
9.6		21.8	35.6	
9.3		50.7	1.9	
9.5		54.3	57.0	
9.8	7	2.5	30.9	
7.5		24.7	19.7	K
9.8		48.2	22.2	
9.2	9	2.7	7.1	
9.5		6.8	49.6	
9.7		8.2	53.1	
8.3		21.4	42.8	K
9.4		48.7	32.4	
9.3	10	16.5	18.3	
9.3	11	13.7	29.2	
6.1		17.2	38.7	K
9.5		40.2	26.5	
7.0		47.2	35.3	Sj
9.3		47.5	11.9	
9.7		58.9	44.2	
9.8	12	13.2	17.6	
9.0		26.2	22.8	
9.4		53.7	35.4	
8.3		59.9	16.2	B
9.7	13	20.2	43.4	
9.6	14	12.7	55.5	

4341—4400

m	17h m	s	—2° ′	
9.2	14	33.2	12.2	
9.3	15	1.7	11.3	
6.3		17.3	14.0	B
9.2		26.7	20.3	
9.2		46.2	28.9	
7.4		52.4	58.8	Sj
9.1		56.4	33.0	
8.5	16	26.0	32.5	K
9.8	17	39.1	38.8	
9.8		46.2	14.0	
9.4	18	1.7	32.7	
9.4		56.3	39.5	
9.6	19	5.7	43.4	
9.5		15.7	16.2	
9.8		21.9	41.0	
9.3		38.1	54.2	
8.1		43.3	15.6	K
9.4		55.0	24.4	
9.4		59.9	3.0	
9.6	20	0.0	47.9	
9.2		17.1	56.6	
9.8		37.9	39.8	
9.8		56.0	51.5	
9.4		57.2	33.1	
9.8	21	4.7	34.2	
9.5		21.7	25.4	
9.5		23.1	15.6	
9.1		38.7	0.3	Sj
9.1		47.0	40.0	
9.5		50.7	20.0	
9.1	22	6.0	58.3	
9.6		12.6	51.7	
9.1		23.7	2.3	
9.0		58.2	6.2	M
8.5	23	5.6	34.6	K
9.1		24.0	46.4	
6.8		26.7	42.7	Sj
9.2		36.2	23.0	
9.3		41.7	42.6	
9.1		46.2	35.9	
8.0		54.2	24.9	K
9.4		55.5	50.0	
9.7	24	13.3	44.3	
9.5		26.7	54.2	
9.8		27.2	31.6	
10		32.2	12.0	
9.1		52.1	39.2	Sj
9.3		55.2	25.8	
9.3		58.7	21.9	
9.1	25	33.2	44.2	
9.2		39.0	39.5	
9.5		52.0	39.4	
9.5		57.2	33.6	
9.5		58.2	32.2	
9.3	26	7.1	39.4	
9.8		15.7	14.0	
9.5		19.0	57.2	
7.0		32.7	56.8	Sj
9.8		40.2	12.6	
9.4		48.6	28.1	

4211 = —1° 3220 4230: 34°41 33′23″.5 B_4, Ep. 1871.46 4368 = —1° 3340

4401—4460				4461—4520				4521—4580				4581—4640				4641—4700			
	17h		−2°		17h		−2°		17h—18h		−2°		18h		−2°		18h		−2°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.4	26	49.2	30.6	8.5	42	0.6	10.5	Sj	9.4	51	53.4	26.6	9.1	7	59.7	31.0	5.8	22	8.4	4.1	L
7.5	27	56.6	47.4	Sj	9.5		1.1	36.2		9.8	52	0.7	19.5		9.5	8	17.2	1.4		8.5		34.2	41.3	
9.7	28	28.3	57.0		9.8		3.3	40.7		8.9		8.2	35.6	K	9.5	9	34.6	8.4		9.0		48.9	42.6	
9.4		33.3	51.4		10		17.2	24.4		9.5		20.7	35.3		9.6		38.2	22.4		9.4	23	1.5	16.4	
9.0		50.0	16.3	K	9.0		30.7	29.3		8.5		24.1	26.8	K	9.7		42.3	30.4		9.5		3.4	20.7	
9.8		53.7	24.3		10		39.2	22.9		9.8		39.8	6.2		9.3	10	1.3	51.1		9.5	24	10.5	29.4	
9.5	29	0.6	23.5		9.8	43	6.2	1.2		9.4		56.9	5.4		8.8		9.6	1.6	M	7.5		11.5	30.3	K
8.4		2.7	5.7	Sj	9.2		8.2	26.5		8.0	53	0.1	17.7	K	8.2		29.6	5.2	Sj	9.5		19.4	19.1	
9.1		13.2	23.6		9.0		24.9	48.8	K	7.3		23.4	33.5	Sj	9.0		47.9	40.7		9.5	25	11.8	50.2	
8.5		24.8	40.5	K	9.8		41.2	39.0		8.7		26.2	1.3		9.3		59.8	50.5		8.8		18.9	8.0	Sj
9.7		33.0	21.4		9.7		47.4	54.2		9.5		53.1	15.6		8.5	11	1.8	38.8	Sj	8.6		23.3	2.6	Sj
9.4		42.7	37.7		9.3		52.2	15.3		9.4		57.7	12.7		9.0		22.3	34.5		9.5	26	15.9	0.2	
7.3		44.2	46.9	K	9.5		56.7	16.0		9.0	54	23.7	7.7	K	9.0		55.7	12.2		8.0		21.6	55.5	Sj
8.6		50.3	55.0	B	9.8	44	7.9	25.3		9.1	55	4.2	36.1		9.2	12	2.3	29.9		9.6		27.5	34.8	
9.8	30	0.2	18.3		9.7		7.9	0.8		8.5		23.7	12.8	K	9.5		10.5	52.3		9.0		37.4	8.9	Sj
9.8		13.3	23.4		9.1		29.9	57.8	K	9.7		24.7	52.9		8.5	13	32.7	49.8		9.5		37.4	6.4	
9.8		37.2	33.7		8.5		43.0	59.0	Sj	8.5		24.7	36.3	M	8.2		36.3	25.2	Sj	9.3		46.0	35.4	
9.3		42.0	59.0	K	9.8		51.2	22.7		9.2		56.9	4.8		9.3		45.1	49.3		8.5	27	12.1	1.3	K
9.8	31	21.1	38.6		9.4		53.6	48.5		9.3	56	24.5	59.6		3		47.9	56.1	K	9.8		16.0	44.8	
9.5		35.3	43.5		8.0	45	26.2	12.7	S	9.4		26.9	45.7		9.5		48.9	51.5		9.5		36.9	50.8	
9.6		52.0	52.3		8.7		30.0	54.5	K	9.8		33.2	12.2		9.3	14	2.2	6.2		9.0	28	7.0	25.7	
9.0		58.7	53.4	Sj	7.5		30.0	32.1	M	9.3		52.2	38.1		9.0		6.8	5.2	M	10		21.9	26.1	
9.5	32	13.3	33.4		9.5		35.2	30.2		9.5	57	21.2	36.3		9.4		13.5	27.6		9.5		31.2	6.7	
9.5		16.5	41.1		9.8		47.0	40.5		9.1		42.8	27.4	Sj	9.5		13.8	45.0		8.6		31.3	29.2	Sj
6.2		39.6	4.1	Sj	8.3		47.6	2.3	B	9.7		44.2	30.3		9.5	15	0.1	36.9		9.8		42.0	13.4	
9.2		53.7	9.2		9.0		50.7	36.0		9.3	58	7.6	43.8		8.8		12.0	16.2		9.5		52.4	27.5	
8.0		56.9	46.7	K	8.8	46	10.9	44.6	K	9.1		20.1	27.0		9.4		15.0	6.6		8.7		56.8	36.2	K
9.5	33	0.7	17.2		9.5		22.2	14.3		9.3	59	13.2	23.8		9.5		44.4	10.1		9.0	29	4.0	17.6	
9.3		29.8	55.1		9.4		30.7	21.2		8.4		24.7	7.8	L	8.7		59.5	32.0	Sj	8.9		5.3	3.8	Sj
9.4	34	6.1	56.9		9.8		40.2	31.3		9.5		34.2	39.7		9.3	16	16.9	2.3		9.3		10.0	52.8	
9.2		27.2	21.9		9.8		46.9	58.1		9.0		38.7	3.3	M	9.1		23.9	5.8		9.1		27.2	50.1	
9.6		31.2	14.1		9.5	47	5.7	3.8		8.3		56.7	31.4	M	9.4		23.9	4.7		10		32.5	27.7	
7.8		56.2	20.6	Sj	9.6		8.1	16.1		9.5	0	3.3	41.7		7.7		25.0	32.0	Sj	9.2		37.0	29.9	
9.7	35	7.5	49.9		9.5		17.7	2.7		8.6		22.9	32.2	Sj	9.4	17	6.0	17.5		9.6		41.1	43.3	
9.1		16.4	3.9		9.6		18.7	55.1		9.5		25.2	33.9		8.5		19.2	6.1		9.8		46.2	35.3	
7.8		38.2	13.3	B	9.8		28.2	34.4		9.0		36.2	2.8	K	10		32.1	52.6		9.5		46.4	46.7	
8.9		47.6	54.5		9.4		43.6	38.4		9.9		41.1	43.4		9.8		35.5	32.1		9.8	30	19.5	22.7	
9.7	36	1.9	47.8		9.8	48	7.0	26.9		6.5	1	3.3	55.4	Sj	9.5		35.5	10.4		7.0		23.2	42.5	K
9.0		53.7	0.9		9.8		13.0	34.5		9.3		19.6	0.2		9.8	18	7.0	34.4		9.5		30.0	39.4	
9.8	37	2.0	13.6		8.5		18.2	44.8	K	9.4		20.7	56.0		8.9		7.7	13.3	K	9.1		42.2	43.0	
8.9		16.6	53.8	M	9.1		19.5	12.8		9.8	2	2.2	20.9		9.5		29.5	8.5		9.7		45.5	14.4	
9.4		38.2	20.6		9.8		46.2	8.6		9.5		31.7	0.3		10		39.8	34.6		9.3	31	2.6	41.6	
7.3		39.3	41.4	M	9.5		51.2	43.1		9.4		53.3	45.9		8.9		46.8	58.6		9.0		3.5	9.2	
9.3		47.9	57.0		8.2		53.2	46.5	Sj	7.9	3	6.2	59.6	Sj	9.8	19	39.0	23.2		9.5		34.3	24.0	
9.3	38	3.7	14.9		9.0		57.6	12.4		9.5		26.7	32.8		9.1		45.5	31.9		9.2		35.3	24.9	
7.5		57.2	47.7	Sj	9.8	49	23.7	27.1		7.5	4	5.6	45.1	Sj	9.6	20	6.5	30.6		7.5		41.4	4.4	B
9.3	39	2.2	52.6		9.7		39.2	1.0		9.5		22.6	40.2		10		23.3	44.3		9.1		47.2	46.1	K
9.0		3.7	13.3		9.5	50	0.9	40.5		8.9		34.1	16.9		9.1		25.5	22.5		9.9	32	12.7	52.4	
9.1		9.9	49.4	K	8.9		7.5	39.9	Sj	9.1		39.2	8.7		9.5		27.0	29.4		9.8		20.6	50.7	
9.4		20.7	27.7		9.0		22.7	50.0	K	9.8		41.0	5.8		9.4		28.8	42.4		9.1		26.5	10.4	
9.5		22.7	15.8		8.3		38.2	7.7	M	9.8	5	27.0	56.1		9.6		31.8	57.5		9.7		28.4	44.9	
9.8		57.7	7.6		9.2		39.0	13.6		9.5		31.7	33.2		9.5		32.3	40.1		10		40.1	47.5	
9.7	40	10.0	20.3		9.4		43.2	14.9		9.5		35.0	46.2		9.4		44.8	55.6		9.7		55.9	46.9	
9.8		10.2	18.7		9.4		43.2	59.5		9.8	6	5.7	10.5		9.6		47.5	27.9		9.0		59.0	23.1	
9.9		23.6	41.0		10	51	9.8	48.2		9.1		12.3	54.5		9.9		52.1	40.9		9.5	33	6.8	25.9	
9.5		31.7	2.2		9.9		11.8	43.5		9.5		37.2	54.0		9.8		52.9	36.4		9.2		7.4	49.6	
9.7	41	0.2	47.7		10		22.1	45.1		8.4		52.6	39.7		9.0	21	31.5	27.3		9.5		38.5	31.8	
8.0		3.7	8.5	Sj	8.9		27.2	40.3	K	7.8	7	2.1	38.2	Sj	8.3		39.9	51.8	K	9.5		40.0	55.6	
9.8		12.2	8.3		9.2		45.0	43.1		8.5		13.7	32.6	K	9.1		55.8	26.0		9.8		40.6	6.6	
9.5		14.4	12.6		9.8		52.2	21.2		9.2		49.1	15.4		9.3		58.5	7.9		9.6		43.7	2.8	

4413: 45:41 47′1:0 B_4, Ep. 1872.55 4652 = −1° 3512 4658 = −1° 3517

4701—4760

	18h		—2°	
m	m	s	′	
9.0	33	44.6	36.1	M
9.7		45.9	1.1	
9.4		46.5	15.8	
9.8		57.6	47.3	
10	34	22.5	19.3	
10		24.6	32.1	
9.9		25.1	42.3	
9.4		26.1	38.6	
9.9		27.3	44.5	
9.2		41.4	27.7	
9.5		42.2	26.2	
9.2		44.0	12.3	
9.5		48.0	10.5	
9.6		54.0	44.3	
9.5	35	5.0	16.3	
10		9.7	41.2	
8.7		23.9	5.8	M
9.0		56.0	10.5	M
9.6	36	11.6	30.7	
8.0		24.5	12.5	M
9.5		29.1	31.4	
9.4		33.3	16.1	
9.5		44.6	24.2	
9.5		45.0	15.9	
9.3		46.4	40.0	
8.5		48.6	37.6	M
9.6	37	8.4	42.1	
9.5		15.0	56.0	
9.9		44.4	5.4	
10		51.4	7.3	
9.9	38	12.3	26.5	
8.8		12.6	7.3	B
9.5		27.7	52.3	
8.8		32.5	10.9	M
9.5		46.4	52.7	
9.1	39	8.4	43.8	
9.1		16.5	9.8	M
8.8		17.3	31.5	M
9.4		17.4	38.4	
9.0		31.3	35.5	M
9.4		32.4	8.2	
10		40.0	8.9	
9.9		45.6	49.1	
9.5	40	4.7	41.7	
9.2		9.5	9.8	
9.7		18.0	39.2	
9.8		21.2	58.9	
9.3		33.0	15.6	
9.0		49.0	28.1	M
9.8	41	3.4	3.6	
8.7		22.4	39.5	K
9.4		53.1	30.7	
9.5	42	1.0	17.9	
9.5		9.4	6.8	
9.8		47.6	56.9	
9.4		48.2	0.8	
8.9		49.0	18.0	K
9.0		55.1	35.5	
9.3	43	6.1	53.2	
9.4		24.1	47.9	

4761—4820

	18h		—2°	
m	m	s	′	
8.9	43	52.1	52.0	Sj
9.0	44	6.5	8.7	
9.8		28.1	25.8	
9.4		41.5	9.5	
8.7		54.1	50.1	K
10		55.0	32.5	
9.4		55.1	25.8	
8.5	45	7.6	24.7	B
9.1		13.5	59.6	M
9.8		24.5	8.2	
9.8		28.7	54.5	
9.8		33.0	11.6	
8.8		39.5	36.5	K
9.4		50.4	47.7	
9.8		56.8	35.2	
9.8		57.6	25.8	
9.8	46	1.5	21.2	
9.5		38.8	23.4	
9.1		43.4	3.9	
9.2	47	10.4	44.8	
9.5		14.4	39.6	
8.8		33.4	3.3	M
9.8		49.5	37.2	
8.0		59.6	29.1	M
9.8	48	4.0	11.9	
9.8		28.6	48.3	
9.8		34.0	11.6	
9.2		48.6	23.5	
9.3		49.1	40.2	
9.5		50.5	46.6	
9.7	49	8.9	6.2	
9.5		11.6	26.3	
9.8		19.3	30.6	
9.5		19.5	35.8	
9.5		24.1	37.5	
10		24.5	43.9	
9.7		24.7	52.9	
8.9		26.1	48.0	K
9.4		36.2	16.5	
9.9		38.3	14.3	
9.8		52.6	30.4	
9.3		56.5	35.8	
9.9	50	2.8	39.9	
8.9		18.4	7.6	M
9.7		26.6	35.1	
9.8		50.1	25.5	
9.8	51	6.5	11.3	
9.8		12.5	28.9	
9.2		17.1	53.6	M
9.8		21.8	5.7	
9.8		40.7	57.9	
9.8		41.1	39.9	
8.9		55.9	3.5	B
9.5	52	0.3	58.9	
9.1		7.1	47.8	M
9.8		10.4	7.1	
9.3		25.4	33.0	
9.8		41.0	25.8	
8.6		51.4	39.3	M
9.8	53	18.6	51.6	

4821—4880

	18h—19h		—2°	
m	m	s	′	
9.5	53	23.4	40.1	
9.8		25.5	21.0	
9.8		35.4	51.5	
9.5		37.1	40.5	M
9.5	54	2.1	44.0	
9.5		5.9	5.4	
9.0		9.4	8.1	B
9.5		37.0	10.3	
9.8		39.6	28.1	
9.7		43.2	56.7	
9.8		52.7	7.0	
9.5	55	0.5	28.8	
9.7		17.5	16.8	
9.4		20.1	29.3	
9.3		43.2	44.3	
9.8		48.0	12.3	
9.3		49.7	19.7	
9.5	56	10.3	29.0	
8.3		18.9	3.8	B
8.5		38.0	14.1	M
9.6		48.5	59.1	
9.8	57	9.6	24.0	
9.8		19.8	52.7	
9.4		28.5	15.9	
9.3		40.1	35.8	
9.8		48.0	21.8	
9.5		52.7	43.9	
9.8		58.6	30.0	
9.8		59.4	10.3	
9.6	58	11.7	41.1	
9.0		17.7	25.4	M
10		22.0	52.4	
9.0		30.7	28.4	M
9.2		35.4	3.0	
9.3		57.1	29.8	
9.5	59	14.4	40.6	
9.2		18.3	42.7	
9.8		28.9	5.1	
9.2		30.5	17.8	M
9.1		38.2	25.1	M
9.4		51.5	22.2	
9.8		56.1	30.3	
9.8		57.9	8.8	
9.0		58.1	43.5	M
9.0	0	9.9	40.4	
9.4		15.0	58.3	
9.4		33.5	14.0	
9.0		38.6	41.0	M
9.8		51.5	12.9	
9.6		54.1	38.2	
9.8	1	14.1	1.0	
7.0		19.3	30.8	B
9.8		51.5	19.8	
9.3	2	23.0	8.0	
9.5		23.3	57.1	
9.8		30.1	52.6	
9.6		34.6	13.1	
9.0		54.4	40.8	M
9.2	3	5.5	26.4	
9.3		33.4	54.1	

4881—4940

	19h		—2°	
m	m	s	′	
7.7	3	36.9	52.2	Sj
9.3		42.0	21.9	
9.8		44.6	42.7	
9.5		47.4	1.2	
8.8	4	15.8	36.7	R
8.9		28.9	46.3	M
9.8		54.7	15.5	
9.5	5	1.6	49.7	
9.5		6.6	57.2	
9.5		17.7	40.3	
9.5		24.1	32.9	
9.7		30.9	9.9	
10		31.8	13.5	
9.4		45.1	37.0	
9.5		48.6	25.8	
9.6	6	6.9	4.2	
8.3		15.7	4.6	K
9.4		17.1	50.6	
9.0		19.6	58.6	Sj
9.8		26.5	23.6	
8.9		28.7	3.5	K
9.1		41.5	22.0	M
9.7		48.5	12.6	
9.8		53.5	18.2	
8.5		55.6	40.0	Sj
9.1	7	3.3	10.5	
9.1		9.3	10.2	
9.8		14.0	15.2	
9.8		14.5	11.9	
9.8		17.1	50.0	
10		55.2	15.2	
8.3	8	9.6	49.7	L
8.5		17.3	15.8	K
9.2		29.1	53.1	
9.8		31.5	16.7	
8.5		41.3	55.1	B
8.9		43.5	11.8	
8.5		48.6	22.8	K
9.5	9	2.9	12.1	
8.6		3.0	28.4	K
9.5		5.0	45.5	
9.6		13.1	16.0	
9.4		23.5	21.3	
8.3		25.7	12.3	B
9.3		34.3	43.2	
9.8		34.3	29.4	
9.5		39.0	1.4	
9.4		40.3	30.6	
9.3		43.2	47.7	
9.5	10	46.4	1.7	
9.5		48.5	58.0	
9.0		50.1	23.5	
9.4	11	5.5	54.7	
9.4		7.0	8.7	
9.2		8.6	8.8	M
9.7	12	2.1	58.1	
9.1		6.7	22.5	
9.3		12.2	26.7	
9.5		27.5	26.2	
9.7		30.1	54.8	

4941—5000

	19h		—2°	
m	m	s	′	
9.7	12	30.9	48.7	
9.5		37.0	2.3	
7.8		40.7	51.7	K
9.5		52.8	2.4	
9.7		53.0	45.4	
7.3	13	3.0	44.9	K
9.5		8.7	15.0	
9.5		27.1	50.6	M
9.5		49.0	48.0	
8.5	14	2.7	45.4	Sj
9.3		6.5	15.3	
9.8		8.7	36.0	
9.2		9.7	51.8	
9.0		12.5	50.8	K
9.3		13.5	24.7	
8.0		15.1	6.4	B
9.4		24.7	37.4	
9.8		25.4	13.2	
9.8		33.3	49.8	
9.8		40.6	17.7	
9.7		58.3	54.5	
9.4	15	5.6	18.9	
9.2		13.4	14.9	Sj
9.1		15.4	2.4	M
9.2		24.4	0.9	
9.5		27.3	57.7	
9.6		31.8	5.6	
9.4		38.7	51.7	
9.8		42.2	11.8	
9.8		44.2	15.6	
9.8		51.8	38.7	
9.8	16	19.4	9.1	
9.1		33.7	25.9	M
9.0		44.9	8.4	
9.0		54.0	4.2	K
9.3	17	6.6	6.0	
9.8		7.5	45.9	
8.9		26.3	43.7	Sj
9.4		27.1	39.1	
9.3		27.2	20.6	
9.5		35.3	23.1	
8.7		45.5	23.0	Sj
9.1		46.2	24.8	M
9.5		49.7	10.0	
9.4	18	3.4	18.9	
7.0		5.2	20.4	K
9.0		12.1	7.0	M
9.4		13.0	26.0	
9.5		19.6	45.1	
9.8		34.2	5.8	
9.5		48.8	29.2	
7.8		50.2	13.9	K
9.5		55.2	20.0	
9.4	19	4.7	9.0	
9.5		6.8	31.8	
9.8		45.8	56.3	
9.5		47.8	42.9	
7.5		50.0	18.4	Sj
9.7	20	0.3	49.2	
10		14.5	45.8	

4756 = —1° 3572 4965 = —1° 3726

5001—5060				5061—5120				5121—5180				5181—5240				5241—5300			
	19h	−2°			19h	−2°			19h	−2°			19h—20h	−2°			20h	−2°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.4	20 23.7	30.7		9.4	29 17.4	25.5		9.8	40 42.8	25.7		9.8	59 40.7	46.1		9.8	12 28.6	24.3	
9.5	33.5	16.7		9.5	55.8	30.5		10	44.6	13.1		9.6	0 1.5	19.2		9.9	39.9	51.2	
8.8	41.9	45.3	M	9.2	56.8	4.0		9.5	50.4	52.0		9.2	14.1	1.2		9.6	41.6	32.5	
9.5	55.2	54.2		9.5	30 6.9	16.2		7.5	41 6.9	10.8	K	8.4	19.6	40.7	Sj	10	44.0	29.5	
9.4	57.3	47.7		9.2	16.6	53.2		9.0	33.3	0.7	K	9.5	28.7	42.8		9.2	55.7	39.7	
9.5	21 6.8	24.9		8.9	17.3	45.3	Sj	9.5	40.2	1.8		9.1	34.3	47.7		9.2	58.8	50.0	K
9.1	9.7	49.8	M	9.5	26.0	19.9		9.3	45.4	35.6		9.4	38.9	31.1		9.5	13 7.2	34.9	
9.4	19.6	40.6		9.0	34.4	51.9	K	9.5	42 15.0	24.8		8.7	1 54.1	3.5	M	9.4	10.0	13.9	
9.8	28.3	39.2		9.8	31 0.5	48.8		9.1	24.5	23.8	M	8.2	2 2.0	48.1	Sj	9.5	15.7	35.3	
9.5	39.7	0.2		9.5	8.7	3.1		8.8	32.6	31.1	M	9.5	26.6	55.9		9.5	20.3	46.6	
9.0	59.0	23.6		9.3	20.6	54.6	M	9.1	41.0	25.0	M	9.6	27.3	50.5		9.8	24.5	4.3	
9.5	22 1.3	29.1		9.5	40.0	56.2		9.0	43 20.3	46.3	K	9.4	33.1	20.0		9.6	25.1	1.4	
9.8	10.2	58.5		9.5	45.7	3.1		6.7	37.0	49.2	K	9.5	41.2	35.5		9.5	40.4	7.6	
9.1	12.2	21.4	Sj	9.8	32 40.3	55.5		9.2	48.9	40.1	M	9.6	56.1	35.0		9.1	43.0	4.7	Sj
9.8	21.8	44.4		8.5	41.2	59.3	Sj	9.5	44 4.7	53.0		9.5	59.8	3.3	M	9.4	45.9	53.3	
9.5	47.0	54.0		9.5	33 2.4	5.2		8.0	31.6	30.8	K	9.7	3 27.5	44.3		8.8	52.6	27.6	K
9.5	48.0	27.6		9.4	7.9	2.2		9.4	45 5.6	30.3	M	9.8	5 31.2	27.7		9.5	53.8	12.8	
9.5	51.8	33.5		9.3	21.2	14.8	M	10	8.4	49.2		9.7	41.5	56.8		9.8	59.1	57.5	
9.1	59.2	37.2	M	8.0	21.5	11.6	R	9.1	47.5	57.6	Sj	9.7	58.7	6.0		9.6	14 10.5	43.2	
9.9	59.3	43.5		8.9	33.6	38.0	M	9.8	57.5	34.4		9.7	6 0.8	15.7		9.2	35.5	57.1	
9.4	23 27.5	40.3		8.0	39.1	38.5	K	8.9	57.5	15.2	M	9.3	18.6	29.5		9.5	37.6	55.5	
7.7	27.6	19.5	K	9.4	47.3	51.3	M	9.5	46 18.6	40.1		9.5	20.0	47.8		9.8	15 6.7	35.4	
9.5	36.2	34.9		9.4	49.0	53.6		9.5	37.6	41.2		9.3	21.5	0.3		9.6	16 2.9	12.1	
7.3	43.2	24.3	K	9.5	34 0.0	43.5		9.3	47 22.0	26.1	M	9.1	35.9	3.1	B	9.4	3.8	19.2	M
6.1	24 8.9	36.2	M	9.1	0.7	44.0	K	9.7	57.4	47.1		8.8	48.5	35.1	K	9.5	7.5	43.5	
6.0	16.1	23.6	K	9.6	6.0	41.0		9.5	48 10.9	8.1		9.8	55.7	10.8		9.5	19.7	2.4	
9.0	20.7	40.3		9.8	17.2	52.8		8.7	23.0	16.6	K	10	7 4.0	34.1		9.7	32.0	0.2	
9.4	31.7	41.6	M	9.8	53.6	48.9		9.8	49 17.1	30.2		9.7	24.0	14.9		9.5	36.6	2.4	B
9.6	47.6	16.2		9.6	35 1.1	45.1		8.8	17.8	41.2	M	9.2	32.1	27.4		9.5	55.1	11.7	
9.8	25 4.8	53.4		8.8	3.0	55.4	K	9.8	25.6	31.1		9.5	43.5	1.5	B	8.0	17 11.4	0.1	B
9.4	13.8	27.6	Sj	9.5	6.0	20.7		8.7	44.7	22 5	L	8.4	44.4	30.7	K	9.2	32.0	43.3	
9.4	44.2	20.3		9.5	53.0	29.3		9.8	50 1.8	41.4		9.2	8 6.5	56.4		9.8	18 37.5	4.0	
9.3	47.3	22.5		8.7	36 2.9	46.9	Sj	9.2	13.4	23.8	Sj	7.9	10.2	59.9	Sj	9.5	50.0	19.2	
9.8	51.0	45.0		8.5	13.8	18.1	Sj	9.2	40.6	44.9		9.8	18.5	6.9		9.1	57.4	53.7	M
9.6	59.4	7.3		8.9	33.3	20.8	K	7.5	50.1	36.6	Sj	9.5	38.1	21.6		9.5	57.4	21.6	M
8.5	26 0.0	11.1	M	9.5	38.4	55.6		9.8	51 12.8	40.7		8.3	9 6.4	1.1	Sj	9.5	19 6.6	27.4	
9.7	2.5	52.2		9.5	41.3	45.3		8.8	31.3	49.8	K	9.3	12.8	52.7		9.4	21.4	59.7	
8.6	20.8	28.9		9.8	50.1	31.0		9.5	39.0	22.0		9.2	15.2	30.5	M	9.1	21.9	48.8	M
9.1	32.3	19.2	M	9.1	37 12.3	57.9	K	7.0	52 10.0	21.1	L	9.0	49.1	19.1		8.0	34.4	39.3	K
8.8	36.2	16.7	R	9.7	22.7	54.0		9.0	12.0	54.0	K	9.8	51.3	15.5		9.4	51.8	49.7	M
9.5	40.4	7.2		9.8	24.6	30.3		9.5	17.6	10.3		7.8	52.0	30.3	L	7.8	55.2	1.2	Sj
9.3	40.5	23.8		9.3	25.9	4.2	M	9.5	49.5	25.5		9.0	57.1	22.8		8.0	55.7	35.1	L
9.4	47.8	30.3		8.7	32.4	52.2	K	9.2	53 7.4	3.0	Sj	9.5	10 1.6	49.0		7.0	56.2	33.9	K
9.3	57.8	28.7		9.5	51.6	1.2		9.4	16.4	53.1		9.5	16.7	58.9	M	9.0	20 0.2	28.6	
9.5	27 8.3	57.6		9.1	51.9	9.5	B	9.8	19.0	4.2		10	17.1	23.6	M	9.8	55.2	28.6	
9.8	8.4	33.5		9.2	38 4.6	25.5	M	9.3	24.6	0.2	Sj	9.3	21.1	17.6	M	7.3	21 18.1	12.8	Sj
9.5	16.0	58.0		9.5	21.3	20.4		9.2	38.3	40.6	M	9.4	22.2	8.2		9.5	31.6	50.7	
8.5	32.8	30.4	Sj	10	21.5	58.8		9.0	54 5.9	4.0	B	9.3	35.2	34.8		9.6	52.7	19.9	
8.9	39.1	33.9	M	9.6	32.8	54.8	M	9.1	10.2	4.2	B	9.5	44.0	42.7		9.3	55.6	1.8	Sj
9.4	39.1	11.8		9.6	36.9	43.7		9.5	55 2.9	52.5		8.5	48.6	21.5	K	10	58.4	19.3	
9.1	42.9	38.5		9.4	39 5.0	29.6	M	9.8	24.0	55.5		9.4	59.1	19.5	M	8.7	22 17.6	32.8	K
9.0	28 12.6	45.3	M	8.7	23.6	36.8	M	9.8	32.4	3.1		9.5	11 31.2	45.6	M	9.5	18.0	58.0	
9.5	13.6	57.1		9.5	37.0	33.1		9.4	56 5.6	57.8		9.9	31.9	32.8		9.7	23 42.3	44.7	
7.7	17.7	45.7	L	9.2	37.4	4.2		9.3	42.9	5.5		9.2	38.8	10.7	Sj	9.1	53.1	12.1	M
9.4	23.7	16.7		8.7	51.9	9.2	L	8.9	57 18.6	43.3	M	9.6	40.4	27.0		9.4	24 21.1	15.5	M
8.9	38.0	54.0	K	8.9	40 11.5	15.2	L	9.4	29.7	45.0		8.7	57.1	34.6	Sj	9.5	24.2	33.2	
8.3	47.2	38.2	L	9.3	27.0	54.2	K	9.3	58 27.2	9.7		9.4	12 6.8	4.6		9.0	45.6	33.7	K
9.4	29 2.5	21.4		9.1	28.1	3.2	K	8.0	41.4	7.5	K	9.3	13.4	1.8	M	9.1	45.8	22.1	
9.2	14.1	59.4	K	9.4	31.8	44.4		9.0	47.0	49.1	Sj	9.0	19.3	41.6	K	9.7	57.5	16.1	
9.8	16.3	30.1		9.7	37.3	16.3		9.2	59 25.4	50.8		8.0	19.6	41.4	K	9.8	58.3	54.0	

5125 = −1° 3831 5166 = −1° 3879 5183 = −1° 3897 5204 = −1° 3927
5216 = −1° 3936 5267 = −1° 3970 5270 = −1° 3976 5281 = −1° 3982

5301—5360

m	20h m	s	—2° ′	
9.0	25	2.6	34.8	Sj
9.6		23.7	28.3	
9.0		31.0	37.0	K
9.5	26	25.2	27.4	
9.2		32.4	10.7	Sj
10		34.1	9.7	
9.6		43.3	36.6	
9.0		46.8	15.0	M
9.6	27	12.7	26.8	
9.0		17.3	45.5	K
9.0		17.8	14.9	Sj
9.1		23.8	50.6	M
9.6		33.5	53.2	
9.5		43.5	41.7	
8.0		55.7	32.5	Sj
9.2	28	6.2	52.9	M
9.6		9.8	44.5	
9.5		14.4	56.8	
8.8		34.6	0.0	M
9.8	29	0.6	6.5	
9.3		7.1	54.7	M
9.3		20.8	17.7	
9.3		47.3	44.5	M
9.5	30	19.1	39.7	
10		33.2	42.8	M
9.7		44.0	28.0	
9.5	31	33.6	10.2	
6.9		41.0	55.0	K
9.6	32	55.2	6.6	
9.2	33	6.4	6.6	M
9.4		15.9	29.8	
9.6		25.3	13.5	
9.2		36.8	33.8	
9.5		40.1	7.6	
8.8		50.3	49.2	K
9.1	34	4.0	2.8	B
8.5		9.7	17.9	K
8.6		19.1	31.6	M
9.6		19.2	47.5	
9.2		25.0	58.6	M
9.5		34.6	0.6	
9.9		37.9	48.7	
7.6		54.4	50.4	K
9.8	35	4.9	41.2	
8.4		6.3	52.5	K
9.6		18.5	53.2	
9.5		30.8	15.9	
9.4		38.8	17.6	
9.0		42.2	6.7	
9.9		53.1	3.3	
8.0	36	10.2	57.7	Sj
10		13.7	9.6	
9.7		20.9	37.5	
9.3		21.8	21.3	
9.5		48.7	57.3	
9.6		55.9	52.3	
8.9	37	4.0	51.9	M
9.4		8.4	19.8	
9.8		22.8	23.4	
9.5		58.7	23.4	

5361—5420

m	20h m	s	—2° ′	
9.0	38	13.6	49.2	B
9.6		32.3	50.0	
9.5		45.9	40.4	
9.5	39	6.3	38.3	
9.2		29.8	12.7	
8.2		34.4	13.0	Sj
9.8		44.7	45.5	
9.5	40	1.3	36.7	
9.3		31.3	24.9	
9.0		39.7	9.5	M
8.9	41	20.5	45.6	L
9.8		28.4	38.8	
9.4		29.2	57.7	M
9.5	42	19.0	46.5	M
8.9		20.7	2.8	K
9.4		25.0	47.1	M
9.3		48.3	55.7	M
8.7		49.6	5.5	L
9.7		49.7	28.5	
10	43	2.0	50.1	
9.3		10.7	57.2	M
9.5		13.7	12.2	Sj
9.3		28.3	21.6	
9.3		38.9	28.8	
10		43.8	48.0	
9.8	44	13.6	32.5	
9.2		16.3	5.7	M
9.7		16.7	8.8	
9.4		19.8	16.2	
8.6		30.1	47.8	Sj
9.8	45	16.4	20.0	
8.4		28.9	47.1	Sj
9.6	46	13.4	29.3	
9.4		28.7	19.0	M
9.5		51.7	2.1	
9.8	47	11.6	44.4	
9.5		17.6	15.4	
9.9		18.0	37.8	
9.2		20.5	53.0	Sj
9.0		31.6	6.7	Sj
9.6		42.8	41.6	
9.5		43.7	51.3	
9.0		43.9	31.3	M
9.3	48	7.9	25.9	
10		11.8	51.2	
9.4		19.4	37.7	
9.3		57.0	6.7	
9.2		58.5	7.1	M
8.9	49	4.0	29.8	K
9.6		24.6	51.0	
9.3		36.3	21.2	M
9.7		46.0	55.6	
8.5	50	4.7	48.1	Sj
9.2		10.0	48.8	M
10		21.2	49.6	
8.7		49.3	19.6	L
9.1		53.9	28.9	L
9.8	51	31.8	47.5	
9.4		48.6	28.0	M
9.6	52	0.4	38.1	

5421—5480

m	20h—21h m	s	—2° ′	
8.0	52	1.7	1.9	K
9.8		43.0	35.5	
9.5	53	17.2	58.5	
9.4		34.8	22.3	M
9.4		38.3	41.9	
8.8		57.2	0.6	Sj
9.8	54	48.1	41.2	
9.3		56.1	19.9	M
9.6		57.8	18.7	
9.5	55	22.0	16.1	M
10		23.4	50.0	
9.3		50.0	52.6	
7.4		57.9	53.0	Sj
7.0		58.7	8.6	K
8.7	56	1.7	40.7	K
9.4		25.2	44.2	
9.4		43.6	15.9	
9.1		52.3	5.2	Sj
9.8	57	11.6	55.8	
9.6		13.9	24.0	
9.5		14.4	57.5	
9.4		19.0	31.8	
9.5		22.9	5.0	
9.0		26.5	46.4	M
9.5		39.0	34.7	
9.5		54.4	10.3	
9.5	58	29.5	24.1	
9.5		40.5	48.4	
9.7		51.5	32.6	
9.5	59	18.3	44.9	
9.4		19.4	21.6	M
10		21.2	19.4	
9.0		23.5	55.0	M
9.8		47.5	54.1	
9.5	0	1.7	15.7	
7.0		10.5	37.4	Sj
9.8		14.3	1.4	
9.8		20.4	56.0	
9.5		40.8	53.6	
9.1		42.4	17.5	M
9.6		58.3	57.7	
9.7	1	8.2	46.0	
9.1		19.9	5.1	
9.3		33.5	23.2	M
9.5		45.2	5.3	
9.5	2	9.8	2.4	
9.8		11.9	55.7	
9.5		29.4	27.4	
9.5		46.2	10.9	M
9.3		47.0	35.3	M
9.4	3	7.5	27.0	
9.2		11.0	36.0	M
9.7		30.0	57.2	
8.9		45.9	10.6	
9.5		46.9	51.8	
7.6	4	2.3	44.3	M
9.1		43.6	38.0	M
9.4		44.2	44.7	
9.2		51.2	29.7	M
9.3	5	7.0	14.1	

5481—5540

m	21h m	s	—2° ′	
9.5	5	32.1	37.1	M
9.6	6	2.9	58.6	
9.7		10.7	50.4	
9.5		20.8	49.9	
9.7		41.5	34.1	M
8.9		59.8	51.7	K
9.4	7	19.4	27.5	
8.3		19.8	37.7	M
9.8		23.3	48.4	
9.6		44.3	51.0	
9.8	8	11.1	37.6	
9.5		37.5	33.9	M
9.5		40.8	42.2	
9.4		51.1	49.7	
6.8	9	9.5	12.4	K
9.8		11.5	52.3	
9.2		22.5	59.4	M
9.4	10	10.5	14.9	
7.9		33.4	44.8	K
9.5		40.3	59.9	
9.5		48.5	3.2	
10		55.8	20.4	
9.5	11	14.0	8.4	M
8.3		15.6	44.5	K
8.3		49.4	22.4	K
9.4	12	47.9	42.4	
8.3		49.5	6.5	K
8.6		55.6	39.9	Sj
9.3		59.1	55.0	M
9.0	13	4.0	19.5	K
8.9		9.4	3.6	Sj
9.9		13.1	41.0	
9.7		15.6	43.5	
9.2		28.8	42.6	M
9.8		52.5	9.0	
9.1	14	13.8	42.2	M
9.4		19.7	2.7	M
9.2		28.4	1.3	M
9.8		38.7	53.2	
9.3	15	2.1	31.8	M
10		31.4	51.0	
8.8		45.7	25.9	B
9.7		52.0	19.1	
9.1	16	5.5	12.8	Sj
9.3		36.1	32.0	M
9.5		49.6	29.5	
9.8		54.1	50.6	
9.5		59.8	50.7	Sj
9.5		59.9	20.4	
10	17	4.0	15.3	
9.1		4.7	20.1	M
8.7		35.8	55.5	K
8.1		35.9	36.3	K
9.6	18	0.9	8.2	
9.3		16.5	7.0	M
9.8		36.4	13.6	
9.8		48.6	21.9	
9.5		49.2	13.5	
8.8		50.3	18.8	K
9.8	19	43.9	53.6	

5541—5600

m	21h m	s	—2° ′	
9.0	19	45.0	21.8	M
9.8	20	2.2	44.0	
9.3		16.8	43.9	M
9.8		56.4	48.9	
9.8	21	2.3	45.3	
9.7		8.2	55.7	
9.1		17.1	50.0	M
9.2		34.5	11.8	M
9.5	22	11.4	27.0	
9.5		39.2	5.6	
8.3		44.5	9.9	K
9.5	23	1.3	4.4	
9.4		29.2	28.6	
8.8		34.5	21.7	Sj
9.5	24	8.7	16.6	B
9.2		10.2	11.7	B
9.8		14.2	33.5	
10		21.3	1.8	
9.2		21.5	12.7	B
9.7		31.5	7.3	
8.7		36.0	10.3	B
9.1		46.1	35.7	M
8.3	25	11.1	14.5	K
9.4		43.6	32.2	M
9.2	26	17.2	37.1	Sj
8.8		38.0	11.9	K
9.4		43.0	8.0	M
9.1		56.7	39.5	K
9.4	27	10.1	37.4	M
9.6		12.1	47.3	
9.5		40.3	42.8	
9.3		41.5	8.0	M
9.7		44.0	47.1	
9.3		49.5	20.3	
9.7		57.2	31.9	
9.6	28	2.2	39.5	
9.5		7.1	3.8	B
9.2		48.3	49.5	
9.1		48.3	48.9	M
9.8	29	20.2	48.2	
9.3		31.5	6.2	M
9.3		32.1	12.7	M
9.5		36.8	54.0	
9.8		45.6	41.8	
9.6		55.5	4.3	
9.6		59.6	13.5	
8.9	30	10.5	59.8	M
8.7		41.9	56.4	L
9.5		49.8	7.9	
8.9	31	1.2	39.7	L
9.8		12.2	55.4	
9.5		19.0	0.2	
9.2		29.6	13.1	L
9.8		35.9	44.8	
9.0	32	9.7	30.7	K
10		10.1	0.0	
9.3		51.2	25.8	K
9.5		51.5	47.4	
9.8		53.7	29.8	
8.6		56.2	39.7	K

5319 = —1° 4008
5518 = —1° 4154

5417: 53ˢ.49 28′56″.2 B_1, Ep. 1883.65
5596 = —1° 4189

5433: 57ˢ.88 53′30″.7 B_1, Ep. 1883.65

5601—5660				5661—5720				5721—5780				5781—5840				5841—5900			
	21h	—2°			21h—22h	—2°			22h	—2°			22h	—2°			22h—23h	—2°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	33 35.1	12.6	M	9.7	48 25.0	27.0		9.5	7 47.1	50.6		6.3	26 34.7	19.0	K	9.5	44 45.4	42.1	
9.3	34 2.8	54.1		9.4	47.4	25.4		9.7	8 26.3	13.6		9.0	27 10.0	9.0	K	10	45 10.0	4.2	
8.5	8.7	35.2	K	9.8	47.5	19.1		10	42.7	56.1		8.3	10.7	13.6	K	9.0	16.1	6.9	K
9.3	16.9	50.0		9.8	52.5	57.2		9.6	46.8	10.5		9.5	17.4	6.7		9.5	27.5	53.9	
9.0	20.6	22.0	B	9.8	49 29.3	48.7		9.5	47.7	4.9		8.2	38.2	16.0	K	9.2	34.8	21.4	M
9.6	21.5	50.6		9.7	50 6.7	15.9		6.3	9 5.4	18.8	K	9.5	43.5	0.0		9.1	42.8	23.6	K
9.8	26.5	1.5		9.0	33.2	15.1		9.3	10 1.5	51.1	M	9.5	52.9	57.4		9.3	56.4	50.9	
9.8	30.7	30.5		8.4	50.0	30.9	M	9.0	44.2	56.1	Sj	9.6	28 22.9	55.4		9.7	46 31.7	19.1	B
8.7	32.5	48.5	Sj	9.9	51 6.1	32.3		9.7	49.3	49.9		9.5	48.7	16.3		9.6	47 5.8	36.0	
9.3	57.5	39.6	M	9.7	21.2	8.9		9.2	11 5.1	42.6	M	9.7	29 20.3	59.8		9.7	22.7	55.9	
9.6	57.6	12.6		9.5	29.4	56.2		9.4	22.5	26.7		9.8	22.9	13.8		9.4	31.6	9.2	
9.1	35 0.6	19.9	M	9.7	31.7	33.9		9.0	46.8	7.7	M	10	28.3	54.6		9.4	50.3	38.1	
8.3	8.9	57.3	K	8.1	53.2	4.1	K	8.5	12 12.5	31.7	K	8.7	45.5	23.2		8.8	55.1	6.7	M
9.4	12.5	11.9		9.7	53 3.7	18.1		9.5	21.4	49.2		9.3	30 17.4	8.1	Sj	10	48 13.7	40.9	
9.0	31.8	31.7	M	9.4	11.0	21.7		9.7	32.2	58.1		10	18.3	51.1		9.5	49 13.2	20.6	
8.6	33.3	41.2	K	9.7	23.7	43.5		9.0	44.4	48.3	M	9.6	35.6	50.7		9.1	36.9	37.8	M
9.4	38.4	46.1		10	54 5.4	41.5		9.1	13 31.9	59.2	Sj	9.8	47.8	7.5		9.1	47.8	11.3	M
9.4	40.0	45.7		9.7	57.3	5.0		9.4	35.9	8.9		9.7	31 13.2	52.0		6.8	50 55.1	10.7	L
9.0	49.4	22.6	K	9.9	55 36.0	35.3		9.2	46.8	48.8		9.5	20.0	0.1		10	51 51.8	32.1	
9.5	53.6	4.8		9.6	46.2	7.0		8.7	59.8	50.0	K	9.1	59.3	30.0		9.6	52 1.2	54.2	
9.9	36 23.2	50.7		5.3	48.5	51.2	K	4.0	14 9.8	7.0	K	9.5	32 10.8	20.7		9.0	48.8	57.8	K
9.6	30.0	59.0		9.7	55.8	57.2		9.5	14.1	33.6		9.4	14.1	2.8		9.5	53 3.6	11.3	
9.7	37 20.8	31.4		9.2	56 9.4	26.0		9.2	16.8	34.9		9.7	29.0	52.6		9.0	7.9	59.3	K
9.8	25.9	56.6		9.5	10.5	41.1		8.9	30.7	39.0		9.3	32.3	36.9	M	9.5	17.5	13.8	
9.5	38.7	53.2	M	9.4	34.1	50.8		9.1	56.1	43.7		10	32.3	31.3		9.4	25.1	10.9	
9.8	56.6	54.4		9.0	39.4	37.7		9.5	15 15.4	22.0		9.8	34.4	59.6		9.4	38.8	30.7	
9.0	38 8.9	6.0	K	8.9	49.6	48.1	K	9.8	16.6	57.7		9.7	39.9	48.6		8.8	54 5.8	51.0	M
9.6	9.8	5.0		9.2	57 49.2	7.3		9.2	23.1	44.2	M	9.5	51.5	5.7		9.5	21.6	18.7	M
9.7	32.1	46.8		8.2	51.2	7.6	S	9.6	16 37.5	18.2		9.4	52.6	40.8		9.6	28.6	4.6	
9.5	55.9	22.1		10	56.8	8.2		7.7	41.5	47.5	K	9.6	53.5	49.8		9.2	34.3	40.9	
6.8	39 1.0	52.7	K	8.8	58 22.8	19.4	M	8.5	49.9	10.4	K	9.8	33 6.8	30.0		10	55 21.8	1.7	
8.8	4.5	42.6	M	9.0	31.7	45.8		10	17 23.0	42.5		9.1	43.1	12.3	M	10	35.8	12.9	
9.4	4.9	30.1		9.7	53.8	23.0		9.5	29.8	41.6		9.5	57.8	32.3	M	9.6	37.1	39.5	
9.6	9.1	1.2		9.3	56.4	22.6		9.8	40.5	24.3		9.5	34 1.1	11.0	M	9.5	56 27.8	8.4	
9.0	36.5	35.3	M	10	59 9.2	21.6		10	18 23.0	45.8		9.1	45.1	55.5	K	9.5	36.2	54.1	
7.9	36.8	57.4	K	9.6	17.5	37.5		9.3	50.3	16.3		8.9	35 7.7	48.1	K	8.8	50.7	40.8	K
8.8	40 11.1	22.9	M	9.5	19.5	26.6		9.4	19 3.4	51.8		10	8.6	29.1		10	54.6	51.6	
9.4	29.8	31.5		10	34.9	41.2		10	11.8	23.4		10	36 4.2	12.2		9.4	57 21.8	8.8	
9.7	41.6	47.2		10	0 7.5	5.6		9.7	13.5	43.0		9.6	15.7	17.1		9.3	39.8	25.0	
10	41 28.0	1.1	B	9.1	1 11.7	8.0		8.4	37.2	49.1	K	9.4	29.3	24.0		9.4	45.1	36.0	
9.1	36.6	44.3		9.0	23.6	42.1	M	7.3	38.3	2.8	K	10	37 0.3	22.6		9.5	59.6	51.5	
9.0	39.8	42.9	Sj	9.7	26.4	56.7		9.6	38.9	51.1		9.5	10.2	13.4		10	58 23.9	4.0	
8.8	42 21.9	38.6	M	10	29.8	57.0		9.1	41.5	30.9	S	9.4	38 4.0	48.1		9.1	31.2	52.2	K
9.5	43 7.1	4.4		10	58.3	13.5		9.4	45.1	19.6		9.7	5.3	43.3		10	59 35.9	6.2	
9.0	50.5	15.7	M	8.7	2 5.7	43.9	Sj	9.0	58.2	23.2		9.5	39 20.4	49.1		10	55.9	56.7	
8.0	57.1	55.1	K	9.5	22.8	22.0		9.3	20 32.4	21.3		7.0	40 1.3	32.8	K	8.9	0 12.6	53.4	Sj
10	44 22.9	23.7		10	36.0	5.9		8.8	22 5.7	6.7	M	9.5	41 8.6	1.5	K	9.2	24.9	25.9	
9.1	26.1	49.5	Sj	8.7	3 13.7	50.2	R	9.5	24.2	54.7		9.2	11.2	54.7	M	10	44.9	29.5	
9.4	44.2	23.4	M	9.5	4 8.1	50.5		9.4	23 7.9	14.0	M	9.5	16.8	24.1		10	46.9	13.0	
9.2	45 25.3	15.6	M	9.5	24.5	0.3		9.2	33.0	21.1		9.5	49.4	51.1		9.3	47.8	16.7	
9.9	56.1	53.1		9.5	36.9	21.2		10	37.6	43.4		9.8	42 14.5	59.1		10	51.9	8.5	
9.4	46 1.8	33.2		9.6	37.7	5.8		9.4	51.9	57.7		9.3	47.2	11.8	M	9.5	57.6	25.8	
9.1	24.5	24.6		10	5 43.5	52.7		9.6	24 6.6	54.7		9.2	54.4	41.1		9.6	58.6	39.0	
9.8	26.5	25.3		7.4	55.4	21.9	K	9.3	49.0	27.2	Sj	10	43 13.6	58.4		9.5	1 33.9	40.2	
10	48.9	21.3		9.9	6 18.5	41.8		9.5	54.5	23.4		9.8	25.9	30.6		9.5	3 9.9	8.5	
9.8	47 6.6	11.0		9.6	29.4	27.7		8.5	25 3.4	15.6	K	8.5	41.7	12.7	K	9.5	18.9	24.1	
8.8	15.3	24.6	Sj	9.1	48.2	8.6	M	9.9	38.7	56.6		8.9	47.3	25.0	B	9.8	25.7	32.1	
9.5	20.8	45.5		10	48.6	58.3		9.0	55.5	21.2	M	9.5	48.7	2.7		9.0	44.1	3.3	K
9.2	30.1	54.6	M	9.5	7 33.8	12.2		9.3	58.1	27.5		9.2	57.1	41.0	M	9.9	56.2	59.6	
9.7	31.2	35.3		8.0	33.9	46.6	K	8.8	26 33.8	32.0		7.8	44 5.3	34.6	K	9.5	4 4.6	50.2	

5631: schön roth 5827 = —1° 4349

5901—5940					5941—5980					5981—6020					6021—6060					6061—6099				
	23h		−2°			23h		−2°			23h		−2°			23h		−2°			23h		−2°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.5	4	12.1	18.6		10	13	58.0	4.9		10	24	48.0	5.0		8.3	34	55.3	18.1	L	10	47	53.2	15.8	
9.1		14.7	28.2	R	8.5	14	3.7	25.3	K	9.3	25	26.8	4.1	M	9.7	35	36.1	36.9		9.2		58.9	55.1	
8.8		37.2	56.1	K	8.7		36.7	37.0	K	10		45.0	51.5		9.6		40.8	26.6	R	10	48	39.2	34.6	
8.7		45.2	50.1	K	9.0	15	17.2	15.9	K	9.3	26	13.8	18.6		9.4		42.8	12.7		9.2	49	29.2	56.2	
9.5	5	11.9	25.0		9.3		31.7	25.8		9.5		15.1	44.4		10		49.4	45.3		9.5		37.1	57.0	
9.8		14.9	41.2		9.5		52.0	23.3		6.0		41.8	3.0	L	9.5	36	8.8	17.2		10	50	37.2	27.0	
8.8		44.6	51.2	M	9.1	16	19.2	6.8	K	10		54.0	48.8		9.5		38.1	25.7		8.7		37.4	47.1	K
9.5		54.9	13.8		10		37.0	3.7		9.5		59.1	19.4		9.7	37	2.1	18.1		8.4	51	6.4	29.5	K
9.4	6	5.1	14.7		10		49.0	34.9		9.3	27	5.7	42.5		10		24.1	9.2		10		26.2	12.7	
9.1		6.9	46.9	M	10		58.0	32.7		9.5		12.8	18.5	K	9.9		32.1	38.8		9.5		56.2	25.7	
9.4		9.7	20.4		7.8	17	10.7	31.8	K	9.5		14.3	20.7		9.5		57.2	57.0		7.2	52	7.7	39.4	L
9.4	7	5.3	45.2		9.0		28.3	49.0	K	9.8		50.1	56.0		8.9		58.8	45.0		8.1		22.6	55.3	L
8.9		14.6	52.2	M	9.5		45.0	12.6		9.0	28	2.3	37.1	K	9.7	38	48.1	40.0		8.8		24.8	0.3	M
7.0	8	30.7	13.0	L	9.7		51.0	51.9		9.5		14.1	25.2		9.1	39	8.3	19.9	K	9.5		27.2	32.8	
9.4		54.6	0.2		10		53.0	48.8		9.3		31.8	55.9		9.9		12.4	47.9		9.5	53	5.7	44.2	
9.5		59.9	28.8		9.4	18	29.7	8.4		9.7		54.1	2.9		9.5		35.6	23.4		10		20.8	52.4	
7.7	9	6.7	22.5	S	9.8	19	25.0	47.5		9.6	29	10.3	5.7		8.8		56.4	18.7	B	9.7		27.2	49.8	
7.9		15.6	36.8	K	10		35.0	5.1		8.6		50.3	18.9	R	9.0	40	3.2	57.2	K	9.3		56.6	26.1	
10		59.7	50.8		10	20	7.0	7.8		9.3	30	23.3	18.5	K	9.5		6.1	36.4		9.5	54	37.1	21.7	
8.1	10	8.2	18.5	K	9.5		12.0	19.3		8.1		40.3	8.5	K	9.5		34.1	5.1		9.1		51.2	56.8	
9.3		25.9	31.4		9.5		12.7	41.4		9.4	31	4.3	40.4		9.5		49.1	36.3		9.8	55	28.2	43.0	
10		45.1	57.2		9.4		13.5	39.4		9.5		16.6	42.4		9.7		55.8	57.9		9.6		42.8	38.7	
8.4		49.2	40.0	K	9.5		19.0	47.9		10		19.1	40.4		9.3	41	17.4	17.1	R	9.4		47.2	27.8	
9.5		55.1	13.7		9.4		20.3	45.3		9.7		19.6	32.4		10		35.2	36.8		8.8	56	16.2	21.9	K
8.5		59.9	41.4	K	8.7		35.4	15.9	K	9.3		30.3	54.3	K	9.7		43.0	41.7		9.8		21.3	8.0	
8.9	11	11.6	43.2	K	10		40.0	10.4		10		48.1	3.3		9.5		59.2	7.8		10		54.8	35.0	
10		34.9	13.1		10		47.0	53.7		8.9		56.5	57.6	K	9.3	43	7.5	52.6		10		55.3	42.6	
9.4		36.3	54.2		9.7	21	2.0	31.4		9.8		58.8	38.7		9.5		20.2	32.8		10		57.3	34.1	
10		55.9	44.2		10		16.0	33.2		9.7	32	26.4	42.1		8.9		42.9	44.6		9.4	57	35.7	21.8	
10	12	0.9	27.8		10		21.0	12.7		10		32.1	0.2		9.7	44	1.2	1.6		8.7		44.3	39.8	L
10		13.2	51.0		8.7		35.3	16.0	K	10		41.1	42.6		9.2	45	31.2	31.9		8.0		52.2	36.1	L
9.2		17.1	22.0	K	9.9		41.8	58.4		9.2		47.3	29.2	K	9.2		44.4	22.5		9.5		59.2	27.1	
9.5		17.9	30.0		6.5	22	0.3	35.1	K	8.8		49.3	33.5	K	9.7		54.9	57.9		8.7		59.2	14.9	M
9.2		36.1	23.5	K	9.4		10.0	30.0		9.3	33	4.8	9.8	K	9.8	46	10.9	57.8		8.3	58	4.3	38.1	B
10		38.9	28.2		9.4		16.3	16.6		10		19.1	10.9		9.4		14.2	27.0		9.5		27.7	33.2	
9.4		58.7	2.7	K	9.5		17.9	45.2		9.4		39.3	30.1		8.7		15.4	27.9		10		43.3	50.2	
9.5	13	6.7	31.1		9.5	23	0.0	38.9		9.7		42.1	29.7		9.4		23.9	5.4	K	9.0		45.3	58.0	K
9.5		29.0	38.0		9.5		1.0	41.6		9.7		43.5	37.8		9.7		24.7	30.6		8.5		47.2	42.3	B
10		42.0	50.1		9.8		14.2	41.6		10	34	7.1	1.6		7.5	47	13.2	45.1	K	8.0		53.6	2.4	K
9.8		55.3	43.9		9.8		18.3	55.0		9.5		16.1	34.2		9.2		52.4	22.7						

5920: 8:64 18′34″9 B_4, Ep. 1871.97 5999: 23:43 18′22″4 B_3, Ep. 1871.99 6010 = −1° 4471

Zone −3°

1—40					41—80					81—120					121—160					161—200				
	0h		−3°			0h		−3°			0h		−3°			0h—1h		−3°			1h		−3°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.6	0	7.1	33.0		9.3	13	55.3	32.5		9.5	32	48.9	3.1		9.3	46	28.4	14.1		6.2	4	20.6	1.5	Sj
6.8		19.7	21.3	K	10	14	27.4	16.0		9.5		50.6	13.6		9.5		39.0	52.0		9.3		51.5	46.6	
6.5		46.1	14.8	B	10		32.8	42.8		9.5	33	9.0	40.5		9.2		56.9	28.4		9.4		54.5	53.4	
9.5	1	10.3	34.8		10		52.9	49.9		9.3		28.6	6.6		9.3	47	33.5	46.4	Sj	7.5	5	59.2	19.4	K
7.4		17.4	1.4	B	9.4	15	2.9	23.5	Sj	9.5	34	8.9	10.6		9.5		42.6	20.9		9.4	7	23.4	53.0	
10		43.2	19.1		9.2	16	2.2	17.9		8.3		45.3	50.5	K	9.2		49.9	46.7		9.5		23.6	17.1	
10		51.1	3.2		9.3		5.8	44.9		9.0	35	13.6	0.3		10		54.6	2.1		9.5		45.1	43.7	
9.5	2	16.9	49.0		8.0		14.2	51.4	K	9.3		24.9	38.2		9.5	48	0.9	29.5		9.2		46.9	31.5	
7.4		30.1	22.0	K	6.0	17	5.1	1.6	K	9.6	36	1.0	40.4		9.5		2.0	19.5		9.9	8	10.1	36.6	
10		49.6	18.7		9.6		29.5	29.1		9.5		7.1	46.7		9.9		40.3	34.3		9.7		15.4	33.7	
10		55.6	40.8		9.5	19	5.5	27.5		8.9		26.4	52.4	K	9.3		58.7	34.9		10	9	13.6	2.8	
9.1	3	51.4	17.2	Sj	9.4		7.0	29.1		8.8		44.4	2.3	K	7.0	49	23.6	30.9	L	5.7		14.5	15.5	K
9.4	4	2.2	25.5		9.2		27.0	48.6		9.5		58.3	12.9		9.1		28.9	9.9		8.5		17.3	26.9	K
8.0		8.9	52.7	K	9.0	21	3.1	18.5	M	9.6	37	11.6	1.9		9.5	50	39.5	45.2		7.0		33.7	2.5	Sj
10		10.6	38.2		9.3		54.8	38.5		9.3		20.4	24.4		8.5		49.6	21.7	R	9.7	10	17.6	36.4	
9.7		11.1	5.2		9.5		58.4	8.0		9.5		42.3	9.7		7.8	51	39.4	14.1	Sj	9.4	11	37.5	48.4	
9.6		56.4	1.5		7.1	22	13.5	38.5	K	9.0	38	29.3	14.6		8.9		48.0	11.0	K	8.9		49.6	47.2	
7.8	6	59.0	0.1	B	9.6		40.5	34.4		9.0	39	19.4	18.6	K	9.5	52	0.9	59.9		9.5	12	26.0	17.6	
10	7	17.5	8.2		9.0	23	24.7	26.6		7.0	40	12.8	6.6	L	9.4		43.0	30.8		8.7		34.9	5.0	K
6.7		31.1	49.8	K	9.5		35.7	11.0		9.1		25.2	59.8		9.8	54	21.7	20.7		9.2		40.5	26.1	
9.5		33.7	36.5		8.7		51.1	41.9	K	9.4		37.0	52.0		10		32.4	7.2		8.1		45.7	15.9	Sj
8.9	8	2.3	34.8		9.3	24	14.1	14.9		9.3		39.4	22.9		9.8		53.4	32.2		9.7	13	45.8	39.0	
10		7.5	34.3		9.5	25	32.0	49.0		9.5	41	31.7	31.4		9.7	55	57.4	35.5		9.9	14	34.5	56.0	
10		17.2	13.3		8.3	26	13.6	32.1	K	9.3		34.9	31.7		9.6		58.4	23.2		9.5		45.7	56.5	
9.5		18.0	40.5		9.6		27.3	2.8		9.0	42	14.0	49.5		9.3	56	11.7	16.6		9.0		50.6	30.1	
9.8		18.2	17.1		9.4		28.9	59.6		9.5		20.0	2.8		8.8	57	5.3	8.6	Sj	9.0	15	9.8	57.9	
9.8	9	8.7	1.5		8.5		50.8	11.6	K	9.3		52.9	14.2		9.9		37.3	28.9		8.8		29.1	46.6	Sj
10		19.0	10.8		9.3	27	16.0	21.6	M	10		56.5	14.4		9.5	58	11.1	41.6		8.8		39.3	23.7	
9.4		23.6	3.1		8.8		52.2	34.5	K	9.1	43	27.4	8.2	Sj	9.7		36.8	12.5		9.0	16	28.0	43.7	K
9.0	10	6.5	41.3		10	28	20.8	20.7		9.1		28.4	47.5		9.6		45.1	4.9		10		31.4	36.3	
9.5		46.4	0.2		9.1		43.6	6.5		9.4		50.3	3.3		9.5		59.8	41.4		8.0		58.7	13.5	L
9.4		55.3	25.5		9.4	29	11.4	15.9		9.2		53.4	59.1		9.4	59	48.5	18.4		9.5	17	7.4	20.3	
9.5	11	4.6	13.8		9.4		29.0	40.1		7.3	44	9.4	56.0	Sj	8.0	0	18.5	31.0		9.3		14.8	12.1	
9.5		7.6	21.1		9.8	30	7.2	3.4		9.0		58.5	16.8		8.8		52.2	47.4		9.3		26.9	25.3	
9.5	12	24.9	20.8		9.4		53.5	26.1		9.1	45	1.5	42.9		9.5	1	17.0	36.4		5.8		26.9	36.1	K
7.8		25.8	17.0	Sj	9.4		56.0	59.0		9.6		8.2	55.6		9.9		29.9	2.6		9.7		38.6	27.6	
9.0	13	38.9	52.1		9.5	31	22.3	59.7		9.5		16.4	39.7		9.5		39.1	40.5		10	19	1.7	27.5	
7.0		39.3	42.9	L	9.5		54.9	38.3		9.5		29.0	45.0		8.5		47.5	39.7	Sj	9.0		10.9	14.7	
10		41.7	36.5		8.0	32	13.9	52.6	K	8.8		30.2	26.1		9.2	2	42.0	50.6		9.6		17.8	19.6	
9.0		43.6	9.6	M	8.8		41.5	34.6		9.4	46	4.9	40.8		9.1	3	37.7	48.7		9.5		22.4	42.3	

201—260				261—320				321—380				381—440				441—500			
	1h		—3°		1h—2h	—3°			2h	—3°			2h	—3°			2h—3h	—3°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.1	19	41.3	1.1	K	9.2	40	12.3	4.6		10	1	34.3	42.5		9.2	18	55.5	20.3	B	9.8	40	30.8	2.2	
9.6	20	5.5	16.1		8.4		17.9	57.8	K	9.5		42.5	0.9		9.5	19	34.7	2.4		9.8		42.5	19.2	
10	21	40.4	20.2		10	41	34.2	51.3		9.3		48.4	40.1		8.8		55.9	54.9	K	10		48.0	42.7	
8.3		58.3	57.3	Sj	9.5		43.5	18.9		7.1		49.6	1.1	K	8.1	20	8.8	22.2	K	9.3	41	27.4	38.0	
10		58.7	52.9		9.5	43	8.5	43.9		9.1	2	49.2	36.8		9.8	21	26.7	9.1		9.4		31.9	49.9	
9.8	22	6.9	59.5		9.6		29.0	54.8		9.4	3	13.1	14.5		10		55.0	12.2		9.3		52.4	12.3	
9.0		9.8	23.7		9.2		58.3	50.4		8.8		29.6	30.3	Sj	9.4	22	36.3	57.7		9.2	42	13.5	0.9	
9.5		54.4	38.1		7.0	44	15.0	21.3	K	9.3		33.7	11.8		9.2		39.7	57.9		9.8		52.0	17.3	
9.2	23	7.3	54.2		9.1		44.5	21.2		9.2		59.4	26.0		8.1		43.9	2.7	K	9.8	43	9.8	5.5	
9.8		30.8	52.5		9.5		58.1	34.2		10	4	3.5	9.6		8.5	23	28.6	50.9	B	9.8		12.4	41.1	
8.8		32.5	40.0		9.2	45	9.0	0.7		9.5		35.1	6.0		9.5		38.4	42.1		9.6		40.0	20.0	
9.0		54.6	5.2		9.5		20.0	13.6		9.0		35.6	53.7	R	9.3		40.2	5.4		9.3	44	2.6	27.5	
8.7	24	43.2	28.7	K	8.7		26.4	50.1	Sj	9.7	5	3.5	24.8		9.7		53.1	6.7		7.7		4.7	35.8	K
9.0		43.8	43.7		9.5		48.0	16.6		9.6		15.7	17.1		9.5	24	5.7	56.1		9.2		15.6	54.0	
9.2		44.8	15.9		9.5	46	2.3	2.5		8.9		23.3	4.7	K	9.8		48.2	54.7		9.0		57.5	44.0	Sj
9.0		45.0	52.2	R	9.3		54.0	13.0		5.9		23.9	4.3	K	8.8	25	49.5	2.6		8.9	45	54.5	21.4	
9.0	25	3.2	47.9		9.6		58.0	30.1		9.8		50.6	43.7		9.5	26	11.0	16.6		10	46	35.7	55.0	
9.0		41.5	48.2		9.2	47	11.9	1.4		9.5		51.2	22.3		9.5		15.9	14.4		9.6	47	7.8	59.7	
9.5	26	9.8	19.7		9.7		25.6	0.5		9.0	6	13.7	19.1	Sj	10		36.4	36.2		8.0		40.7	53.8	K
9.0	27	21.7	9.4		9.6		40.4	45.4		7.7		23.0	42.7	K	9.0		39.7	50.5		9.8		54.2	7.8	
9.7		23.8	54.7		9.0		49.4	45.2	Sj	9.2		26.5	44.0		9.5		50.8	57.3		9.3	48	50.9	35.2	
9.3		28.3	17.1		9.0		52.3	23.2	K	9.3	8	26.8	17.3		9.8	27	6.7	21.8		9.5		51.8	56.1	
9.4		29.2	29.6		9.0	48	36.1	59.8		8.9		33.7	11.5		9.1		14.2	25.9		9.5	49	23.1	42.1	
7.5		44.8	4.6	B	9.1	49	0.5	7.1		9.1	9	29.8	36.6		8.7		22.2	26.1	K	9.8		33.6	17.4	
9.4		55.8	6.7		9.1		55.1	58.1		8.5		30.9	34.8	K	9.1		45.5	43.9		9.5		38.5	41.2	
9.4		58.5	26.3		9.2	50	15.0	31.8		9.3		47.9	2.5		8.1	28	3.0	5.6	Sj	9.4		43.8	0.6	
9.8	29	49.3	3.0		10		32.0	59.7		9.0	10	34.6	27.2		8.3		32.9	38.6		9.8		52.4	8.0	
8.9		50.0	27.4		8.8		58.5	11.3		9.9		37.2	30.1		9.9		58.7	58.0		9.8	50	23.0	15.6	
9.1	30	8.2	29.8	R	9.7	51	11.2	59.0		9.7		43.9	5.4		9.6	29	20.3	57.4		9.0	51	18.0	37.0	
9.1		11.5	7.4		8.8		34.5	6.8		9.8	11	14.1	59.2		8.3		21.6	47.6	Sj	5.5		24.1	21.7	K
8.8	31	45.8	0.9	K	9.5		43.7	33.1		9.8		14.3	46.6		9.1		31.6	23.2		9.6		26.7	27.5	
9.8	32	1.3	47.5		9.8	52	27.5	14.9		9.6		43.5	3.8		9.8	30	25.2	12.6		9.6		54.6	30.2	
8.3		16.8	15.7	K	9.8		44.0	52.3		var	12	1.5	38.2	B	8.8		26.0	3.5	Sj	9.0	52	14.0	36.5	
9.0		35.8	12.7	K	9.5		54.6	57.2		9.3		4.1	56.5		9.8		52.9	26.5		9.1		20.8	56.1	
8.8		39.1	40.7	K	9.9	53	4.8	2.7		9.0		11.4	38.2	B	8.5	31	39.4	12.6		6.2		21.3	2.6	Sj
9.2		40.9	57.2		8.8		10.8	38.9		9.4		43.8	27.8		9.0		43.5	49.3	Sj	8.6		21.8	7.1	K
9.5		59.5	37.4		9.0		25.5	41.5	R	9.7		56.1	32.4		9.0	32	44.0	33.5		9.5	53	20.0	38.0	
9.8	33	2.4	35.6		10		27.2	32.8		9.8	13	6.5	1.9		9.3		46.5	30.4		6.8		33.4	27.1	K
7.0		25.0	21.1	Sj	9.6		39.1	9.8		9.7		13.4	4.0		9.7	33	39.4	20.8		10		33.8	52.7	
8.3	34	15.9	51.4	K	7.7		43.6	12.0	K	9.3		32.9	10.9		9.8	34	0.5	22.1		10	54	16.4	47.8	
8.0		16.6	41.5	K	8.5	54	44.1	17.1	K	9.9	14	8.7	51.6		6.3		30.6	50.3	Sj	9.6		25.0	26.0	
9.6		39.1	9.4		10	55	2.0	52.5		9.2		14.9	29.1		9.8		49.4	12.7		8.5		43.4	31.1	K
9.6		43.2	47.1		9.5		14.7	1.1		8.9		17.9	37.6	Sj	9.1		56.8	39.4		8.3	55	39.6	34.2	Sj
9.4	35	24.0	23.5		7.0		30.5	4.3	Sj	9.0		31.8	54.1		9.8		57.2	5.0		9.8		40.5	49.6	
9.5	36	20.3	54.6		9.5		43.8	35.4		10	15	12.3	28.0		9.8	35	14.5	48.9		9.5	56	9.0	0.8	
9.5		22.1	21.8		9.4		52.4	39.0		9.8		23.4	39.0		6.7	36	9.1	9.0	K	9.1		20.1	12.9	Sj
9.8	37	31.7	30.1		9.1		57.8	39.0		9.3		29.9	29.2		9.3		49.5	23.5		9.8		26.7	46.6	
9.8		38.0	24.9		7.8	56	34.5	24.4	K	9.6		31.0	51.6		9.8		52.0	35.9		10		34.2	46.4	
9.9		39.7	29.4		9.4	57	3.2	56.8		9.3		48.8	55.7		9.6	37	0.0	6.5		9.8		58.4	8.4	
7.3	38	0.5	53.6	K	10		18.5	23.1		9.8	16	50.1	30.9		9.8		42.0	3.0		9.2	57	9.7	4.3	
10		10.9	7.8		9.5	58	40.1	8.3		8.8		54.6	54.0	K	9.4		55.9	39.2		9.8		20.6	0.5	
9.4		22.7	44.6		9.6		45.7	33.7		8.2	17	3.8	45.2	K	9.2	38	38.9	27.2		9.8	58	2.1	14.0	
9.3	39	2.7	7.4		9.5		48.8	4.9		9.1		8.0	39.4		9.2		45.5	26.0		8.9		25.8	29.5	
8.2		9.8	3.8	K	9.2	59	14.7	55.6		6.7		39.2	26.2	K	9.8		54.9	12.1		9.5		28.0	49.3	
9.5		14.4	18.7		9.7		38.5	8.9		8.6		54.8	52.3		9.5	39	15.5	47.2		9.6	59	5.5	57.6	
10		20.9	4.8		9.3	0	22.4	0.8		9.8	18	7.9	47.6		8.6		50.6	50.1	K	9.6		10.0	47.4	
10		39.6	39.1		9.6		41.0	58.5		10		10.7	32.5		8.5	40	7.7	54.2	Sj	9.6		10.1	49.7	
7.8		42.4	50.2	K	10		57.4	44.0		8.9		14.1	7.8	K	9.0		14.8	11.6		9.8		12.3	2.5	
9.8		54.6	0.9		9.0	1	6.8	26.9		9.8		53.5	29.0		9.6		22.9	40.8		9.5	0	3.4	32.3	
8.2	40	11.6	38.4	K	8.5		29.6	53.7	Sj	9.3		53.6	32.8		9.3		23.9	38.3		9.4		45.5	10.1	

410: 20:79 47′32″.5 B_4, Ep. 1872.09 478: roth

501—560

m	3h m	s	−3° ′	
9.8	1	40.9	25.1	
8.6	2	10.7	47.4	Sj
9.8		45.2	43.4	
9.3	3	10.4	26.1	
9.5		13.3	16.5	
9.3		19.4	26.1	
9.0		38.9	14.4	
9.6	4	2.1	32.1	
8.9		6.3	34.9	
9.9		30.1	36.4	
10		51.4	5.4	
8.2	5	11.8	33.1	K
8.7		25.6	14.9	K
8.7		26.4	27.4	K
9.8	6	17.4	2.7	
9.5		17.8	12.2	
9.0		37.5	32.4	Sj
9.7		46.0	9.7	
9.0		57.4	12.2	Sj
9.7	7	35.9	34.9	
9.3		39.1	2.9	
9.8	8	32.7	33.0	
9.8		57.8	40.2	
8.6	9	28.2	7.4	Sj
8.0		28.5	54.0	K
9.1		42.9	47.9	
10		46.8	43.4	
10		51.5	56.8	
10	10	12.7	39.6	
9.9		25.6	58.5	
9.6		33.3	38.9	
9.8	11	11.7	20.4	
8.8		37.3	42.2	
7.3		42.2	21.9	K
9.2	12	3.9	51.2	
9.8		15.1	13.9	
9.3		44.6	0.8	
8.8		49.5	32.8	K
9.4	13	29.8	42.1	
8.1		33.2	38.1	K
9.8		37.7	19.6	
8.9	15	7.5	27.5	
9.3		10.3	35.3	
9.5		16.8	17.2	
10		17.4	9.0	
9.1	16	12.2	25.0	
9.2		59.7	21.8	
9.3	17	57.8	19.1	
9.1	18	47.5	52.8	
9.8	19	0.4	32.9	
9.5		24.1	52.2	
9.1		28.2	58.8	K
8.9		50.5	47.2	K
8.0	20	3.9	37.3	K
9.7		8.4	11.8	
10		9.2	7.2	
9.5		17.5	53.6	
9.0	21	5.9	38.7	K
9.6		18.4	44.0	
8.6		24.5	43.1	K

561—620

m	3h m	s	−3° ′	
9.8	21	59.7	44.0	
9.8	22	24.7	12.9	
9.1		31.7	42.9	
8.7		58.0	28.8	
8.5	24	8.3	24.1	K
9.7		35.6	54.7	
9.7		49.3	29.6	
9.4		51.7	55.0	
9.8		53.2	11.6	
8.2	25	9.8	48.3	K
8.8		44.6	25.6	Sj
8.7	26	11.4	2.2	
9.7		35.2	0.5	
8.2	27	8.5	42.7	K
9.5		32.6	38.9	
7.4		37.0	53.8	K
9.6		40.2	4.9	
9.1	28	2.3	19.5	
9.2		48.6	49.3	
9.5	29	7.9	27.1	
8.9		16.4	17.9	K
9.8		31.1	3.2	
9.8		38.7	8.6	
9.4	30	1.5	5.2	
9.4		10.6	50.9	
10		27.1	41.4	
9.2		35.4	0.0	
8.5		58.7	2.7	B
9.4	31	6.1	45.7	
9.3	32	15.2	20.5	
6.3		22.6	52.0	K
7.2	33	0.7	41.3	K
9.5		19.1	29.0	
9.6		40.4	22.5	
9.8		53.9	17.3	
9.8	34	6.9	21.4	
8.0		24.8	18.7	Sj
9.7		46.2	3.9	
9.1		47.6	50.1	Sj
9.5	35	10.0	27.4	
9.4	36	19.6	30.1	
9.2		27.4	29.9	
9.6		44.1	4.5	
9.4	37	6.2	8.8	
8.9		15.1	57.6	Sj
9.6		25.1	55.6	
9.9	38	7.6	44.9	
9.6		9.6	48.0	
9.6		51.4	0.9	
9.6		52.4	28.3	
9.6	39	58.5	25.3	
9.0	40	0.7	44.8	Sj
9.5		2.1	48.1	
8.2		27.5	1.3	K
8.9		37.5	9.3	
7.2		42.4	18.7	K
9.1		46.4	39.6	
9.3	42	8.5	2.2	
9.0		27.9	23.1	
9.4		37.4	44.0	

621—680

m	3h m	s	−3° ′	
9.5	43	3.8	21.9	
9.6		29.0	21.3	
9.8		35.5	12.5	
9.9	44	48.7	0.2	
8.5		50.4	51.4	K
9.8	45	39.9	18.6	
9.5		46.1	54.9	
9.8		58.2	58.9	
8.3	46	0.7	43.5	Sj
9.4		19.8	2.9	
5.0	47	0.4	23.3	K
9.5		1.7	20.5	
9.5		6.8	16.5	
9.5		11.3	49.6	
10		31.3	17.8	
10	48	2.0	3.1	
9.9		5.4	2.4	
9.2		21.6	33.0	
9.2		30.3	41.1	
8.7		42.2	32.6	K
9.8	49	25.8	31.4	
10		42.0	17.0	
9.5		42.7	30.4	
10		47.1	21.5	
8.9		59.4	32.7	Sj
9.7	50	17.6	20.0	
8.8		24.2	17.8	K
8.8		34.1	0.6	
9.4		50.9	40.9	
7.1	51	20.2	4.2	K
9.0		24.5	4.3	
9.7		27.0	42.2	
9.4		30.5	38.3	
9.4	52	5.3	43.0	
9.2		24.4	53.1	
9.8		50.5	25.4	
9.6	53	24.6	10.4	
9.0		46.9	54.9	
9.0	54	11.5	3.1	K
9.1		20.4	44.7	
8.8		21.4	18.8	
9.4		30.3	2.6	
10		34.5	40.0	
9.8		41.9	45.4	
9.8		52.5	3.4	
10	55	0.3	46.5	
9.5		2.1	41.5	
9.7		8.0	8.8	
9.5		30.4	47.2	
9.2		49.4	49.0	
10	56	23.9	33.6	
10		24.0	18.4	
9.0		50.2	1.3	
10		53.1	15.9	
9.3	57	0.0	8.2	
8.0		16.9	44.4	K
9.0		33.8	33.7	
9.4		49.0	52.9	
10	58	5.9	17.7	
8.8		26.6	10.2	K

681—740

m	3h—4h m	s	−3° ′	
10	58	36.2	13.6	
9.1		50.4	20.8	
10		57.7	0.8	
9.3	59	38.3	4.9	
8.0	0	16.0	23.3	K
9.5		32.2	49.0	
9.6		45.6	22.1	
9.0	1	19.3	56.3	
9.1		20.1	51.0	
8.3		22.2	4.4	K
9.5		24.4	26.9	
9.5	2	5.8	28.3	
10		17.3	21.2	
9.1		24.9	48.0	
9.0		28.9	41.0	
6.5		34.8	57.2	K
9.3		45.5	7.1	
9.5		58.1	29.7	
8.8	3	1.8	31.2	
9.5		20.4	35.1	
9.1		37.1	3.9	
9.0		54.9	45.4	
8.5	4	5.0	20.6	
8.5		12.4	38.2	
10		23.6	24.4	
10		24.1	1.1	
9.1		30.3	52.7	
9.5		51.3	42.5	
9.4		58.0	21.2	
9.4	5	32.3	51.4	
9.6		37.1	4.8	
9.3	6	1.7	54.9	
9.2		11.8	8.9	
10		20.2	8.9	
9.5		28.4	24.7	
9.5		29.3	50.0	
9.8		30.0	58.9	
9.3		42.4	29.0	
9.4		48.6	31.4	
9.4		59.2	7.2	
9.8	7	16.3	51.5	
9.6		31.1	5.5	
9.5		33.8	56.7	
9.4		45.8	40.8	
8.4		57.6	32.1	B
9.3		57.8	56.8	
8.5	8	30.3	53.5	Sj
9.5		46.8	50.8	
10		52.7	0.2	
8.6		56.8	29.8	K
9.5	9	12.5	30.3	
8.9		31.3	28.8	K
9.3		50.8	26.1	
9.5	10	2.3	59.0	
10		4.5	13.1	
9.3		17.1	3.2	
9.3	11	2.9	35.4	
9.8		15.3	56.8	
9.2		25.5	3.5	
8.9		28.5	3.1	K

741—800

m	4h m	s	−3° ′	
9.4	11	34.8	29.9	
9.5		47.2	43.8	
9.7		51.0	12.7	
8.7	12	3.4	39.4	K
8.8		14.1	28.1	K
9.2		21.3	57.3	
9.6		31.7	14.8	
9.6		35.0	18.6	
9.3		49.9	56.0	
9.3	14	24.2	21.2	
9.8		43.3	30.5	
9.2		58.9	27.6	
9.1	15	6.2	1.0	
9.5		20.3	21.2	
9.8		21.3	34.5	
9.6		31.5	6.0	
9.2		35.4	52.1	
9.5		42.3	53.7	
8.6	16	10.9	50.1	B
10		24.2	2.7	
9.8		32.1	49.5	
9.0		32.6	17.4	
9.6		35.5	14.0	
9.4		48.2	23.3	
9.3		52.4	57.0	
9.4	17	10.0	16.0	
9.5		20.9	52.8	
9.4		22.6	49.4	
9.5		29.9	10.6	
8.8		39.4	1.1	K
9.7		51.5	4.5	
9.8		54.8	0.2	
9.6	18	16.6	0.4	
9.5	19	16.2	47.8	
8.8		37.9	14.2	
9.5		38.9	11.3	
8.8		39.9	9.7	
8.6		44.9	27.2	K
9.7		49.5	16.0	
8.3		52.3	31.3	K
9.3	20	25.5	47.1	
9.6		36.5	24.4	
9.5		47.1	25.5	
9.2		49.4	37.9	
9.1		54.8	28.3	
9.8	21	7.9	11.7	
9.1		12.1	18.1	
9.5		18.9	4.5	
9.1		23.0	34.8	
9.2		39.3	7.0	
9.6		41.5	37.9	
9.2	22	5.7	9.6	
9.6		6.9	59.1	
9.0		27.4	54.4	
8.9		45.4	22.8	K
9.4		49.9	4.2	
9.8		59.5	56.2	
10	23	0.7	48.2	
9.5		12.5	34.0	
9.1		32.6	17.4	B

592: 0ʰ58 40′59″0 B_4, Ep. 1883.04

801—860				861—920				921—980				981—1040				1041—1100			
	4h	−3°			4h	−3°			4h	−3°			4h—5h	−3°			5h	−3°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.6	23 46.0	33.8		9.5	34 57.3	6.2		9.4	46 5.1	42.1		10	54 48.7	0.9		9.0	6 7.2	18.6	
9.2	24 25.6	15.2		8.8	35 1.0	43.7	K	9.3	18.6	26.1		9.5	58.6	2.8		7.7	25.6	48.3	Sj
9.3	34.6	8.0		9.5	19.9	11.4		9.3	39.7	4.3		9.8	55 40.2	50.1		10	46.1	14.2	
9.2	42.8	2.0		8.4	39.7	36.2	K	9.5	40.9	12.1		9.6	42.8	51.7		9.0	46.6	49.2	
9.3	53.6	32.7		9.8	51.2	24.6		9.5	55.5	53.5		8.3	56 5.4	11.5		9.5	50.3	27.1	
9.5	54.4	32.3		9.3	36 1.8	41.5		9.7	47 4.8	29.7		9.4	12.4	2.2		9.5	8 2.8	59.4	
9.6	25 10.6	31.2		10	12.1	16.8		8.8	8.9	56.6	K	9.0	19.4	11.4		9.2	5.9	6.6	
9.8	22.2	2.6		9.1	26.0	26.0		6.6	13.3	27.7	L	9.6	27.4	28.5		9.2	7.8	3.9	
5.6	22.5	30.8	B	8.0	51.8	26.3	L	9.8	17.5	22.9		9.8	31.0	26.2		9.3	9.3	31.7	
9.4	29.6	32.0		9.4	56.4	59.3		9.0	25.7	7.6	K	9.8	36.4	40.7		8.0	11.0	32.1	K
8.7	26 3.5	18.7	K	9.1	37 11.0	15.0		9.2	28.9	11.8		8.7	45.6	4.4	K	8.5	9 0.6	39.7	Sj
8.9	6.6	36.5		9.5	26.1	18.1		9.5	36.9	12.5		9.0	46.2	42.3	K	9.5	0.9	8.7	
9.5	8.9	17.3		9.8	52.2	42.8		9.1	39.0	17.6		8.5	57 2.8	36.6	K	9.8	11.4	29.5	
9.8	11.7	42.9		9.0	53.0	17.4		10	48.1	1.7		9.5	3.0	13.3		9.5	33.5	33.2	
9.7	12.5	15.2		8.6	56.6	20.8	K	9.3	56.2	42.3		9.7	12.6	15.3		9.7	34.1	36.2	
9.5	20.5	39.1		3.5	38 15.3	31.3	K	9.8	48 8.7	48.3		10	21.9	57.2		9.5	49.2	22.1	
9.8	34.1	48.9		9.1	20.0	10.7		9.3	10.5	35.2		9.6	22.7	48.0		9.5	10 38.4	3.8	
9.0	42.6	22.6	K	9.5	27.2	32.2		9.3	10.8	18.4		6.0	39.2	14.5	L	9.5	53.3	40.8	
9.4	48.0	54.7		9.0	30.5	11.5	K	9.4	32.1	58.2		8.5	53.3	52.7	K	9.1	57.6	41.5	Sj
9.5	52.4	42.3		9.3	31.0	33.9		9.4	34.1	58.6		9.4	54.2	47.4		10	11 41.9	5.5	
10	27 8.4	23.8		8.0	35.4	10.6	Sj	9.5	44.5	31.0		9.0	58 4.6	41.3		8.5	52.1	14.0	Sj
9.2	37.7	16.6		9.8	58.9	49.1		9.4	55.1	19.0		9.1	23.1	35.2	K	9.5	12 22.0	9.0	
9.5	47.0	38.2		8.6	39 1.8	58.0		9.5	59.2	45.9		8.7	30.8	18.1		10	45.9	5.9	
8.3	47.5	39.1		7.2	7.9	13.4	K	9.0	49 25.6	21.0		9.9	33.8	48.3		9.5	51.7	45.8	
10	52.7	1.8		9.4	23.0	42.8		9.1	50 0.8	49.9		10	36.4	8.3		9.0	13 10.7	39.6	Sj
10	28 4.4	11.2		9.0	36.5	55.6	K	9.1	1.7	2.6		9.5	36.9	1.4		8.9	14.4	25.4	
9.0	14.9	27.4		9.6	38.4	35.6		9.7	11.1	22.1		9.4	49.2	28.4		9.5	17.0	9.9	
9.8	15.3	59.0		9.7	50.2	29.9		9.8	12.4	48.8		9.5	50.2	32.5		9.3	26.3	23.7	
9.1	32.5	34.1		9.3	40 32.7	29.9		9.8	20.7	4.4		9.1	54.1	17.1		9.5	38.8	56.0	
6.2	48.4	54.4	K	9.6	35.0	0.7		9.1	29.4	27.8		8.0	59.3	41.2	K	8.5	55.8	0.5	K
9.1	50.5	42.1		9.3	42.2	55.0		9.5	55.2	47.8		8.7	59 13.1	34.9	B	10	14 24.0	0.4	
8.3	29 2.2	50.2	K	9.0	53.2	12.5		9.4	51 12.0	7.4		9.4	33.1	27.1		9.3	25.5	6.9	
9.5	2.2	29.6		9.8	54.8	31.3		7.3	12.7	57.7		9.5	37.4	31.3		9.5	32.7	40.0	
3.5	4.5	39.0	K	9.4	41 3.7	6.7		9.7	15.5	23.5		8.5	57.6	41.7	K	9.5	37.4	13.9	
9.8	9.8	7.5		9.5	13.2	53.4		9.4	17.5	24.9		9.0	59.1	17.9		8.0	44.9	5.9	Sj
9.8	13.3	3.5		9.8	15.4	31.0		9.7	21.5	3.0		9.7	0 3.6	7.6		9.5	48.3	23.8	
9.6	17.0	18.5		8.7	25.0	34.8	K	9.3	29.6	8.4		9.0	16.0	30.5	K	9.8	59.7	51.1	
9.5	29.0	46.6		10	52.1	20.3		9.8	45.7	7.1		9.5	17.9	26.3		9.4	15 31.6	54.9	
9.6	39.3	7.0		9.5	53.0	44.5		9.5	55.2	21.1		9.5	18.8	2.3		10	39.6	59.2	
9.3	30 9.1	30.2		9.5	43 2.5	41.7		9.7	59.4	13.8		9.0	39.9	6.8		9.5	42.6	35.8	
9.2	31.4	10.0	B	9.4	9.4	39.5		10	52 20.2	2.1		9.5	1 9.8	31.0		8.5	50.8	4.1	L
9.4	42.9	3.6		9.3	11.1	56.0		9.2	32.5	34.6		9.2	11.6	47.7		10	55.2	17.9	
9.8	45.9	47.9		8.5	17.0	10.9	B	9.2	32.9	2.7		7.5	16.7	0.1	K	9.0	16 5.1	15.2	
9.3	55.5	45.9		9.5	22.0	49.1		9.1	34.5	49.5	K	7.5	18.0	12.2	B	10	24.6	58.4	
9.6	58.5	43.6		10	22.0	3.6		9.4	49.6	33.2		8.0	24.5	30.1		9.5	29.6	59.2	
9.4	31 3.8	0.3		9.4	24.0	45.1		9.1	53 0.8	56.1	K	9.5	49.5	32.3		9.5	32.4	28.1	
9.7	11.4	12.7		9.1	27.0	2.9		10	4.6	21.9		9.5	57.1	14.8		8.5	38.0	13.4	
9.5	16.3	49.9		8.3	44 14.7	23.7	B	9.7	5.6	34.3		9.5	2 56.4	31.6		10	45.7	43.5	
9.8	18.1	22.6		7.3	17.1	54.8	L	9.5	7.4	58.9		9.6	56.4	0.9		9.7	17 8.8	56.5	
9.6	29.6	23.5		9.2	19.1	50.6		10	14.7	4.7		9.5	3 1.4	27.1		9.0	13.9	7.6	S
9.8	38.3	49.7		8.5	21.5	12.2	K	9.5	18.8	23.7		9.8	26.9	28.0		8.8	14.9	24.8	F
9.4	42.0	17.5		9.1	30.4	59.1		9.6	19.3	55.1		9.2	4 13.8	37.7		9.2	19.7	38.6	
9.6	32 21.0	34.5		9.5	43.2	15.7		9.0	37.1	29.2		9.2	15.2	37.1		9.5	52.8	58.2	
9.2	23.2	36.7		8.9	49.8	57.5		9.8	42.9	16.0		9.2	19.6	47.0	K	10	18 7.7	35.3	
8.5	28.2	40.3	K	9.7	59.7	5.4		9.4	43.7	51.5		9.5	47.6	50.6		9.5	35.9	8.4	
9.3	39.1	21.9		9.1	45 4.0	38.6		9.4	54 5.7	26.0		9.5	5 1.7	54.6		9.5	45.9	5.3	S
7.3	33 41.5	48.0	K	8.0	7.6	25.3	K	9.4	11.8	25.0		8.5	13.0	12.5	Sj	8.5	19 2.0	12.5	S
9.5	34 12.5	2.6		9.5	9.4	29.2		9.7	21.3	7.5		10	22.6	39.4		9.2	13.8	0.9	
9.8	22.9	15.0		9.4	44.2	8.1		9.8	31.2	48.3		9.2	43.4	57.7	K	9.5	19.6	36.2	
9.8	56.2	37.9		9.2	45.1	10.3		9.0	48.3	8.4	K	9.0	51.9	8.4	L	9.5	28.7	42.0	

1061: 51°70 14′4″0 B_4, Ep. 1872.14

1101—1160					1161—1220					1221—1280					1281—1340					1341—1400				
	5h		−3°			5h		−3°			5h		−3°			5h—6h		−3°			6h		−3°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.3	19	34.9	8.4		9.4	31	1.3	25.6		8.5	45	41.7	11.5	K	9.0	57	14.4	3.8	K	9.2	5	23.1	42.2	
9.2		48.6	3.0		9.0		4.7	39.0		9.5		42.7	18.2		9.5		14.4	44.2		9.5		47.6	14.9	
9.1		53.0	3.5		10		14.2	8.7		8.5	46	8.7	35.4	K	9.0		18.5	11.8		9.5		56.8	28.4	
9.8	20	0.1	15.5		10		47.8	53.3		9.3		20.8	50.6		9.8		28.6	58.7		9.1	6	13.8	34.5	
9.5		20.8	3.5		9.2		53.2	2.5		9.5		21.8	38.5		9.6		36.0	51.8		6.5		42.0	42.3	Sj
9.4		35.6	13.7		9.5	32	17.7	39.1	K	9.0		35.7	13.7		9.5		41.5	22.1		9.0		47.7	57.2	
9.3		39.0	12.3		8.0		41.0	25.5	K	9.5		48.9	56.4		9.7		53.4	44.0		9.7		51.6	51.8	
9.5		40.7	43.8		7.8	33	6.5	31.1	K	9.0	47	13.6	5.2		9.2		55.0	54.4	Sj	9.7		52.0	27.7	
9.5	21	15.6	9.5		9.2		43.8	59.9		8.5		22.7	14.2		9.8	58	14.4	47.5		9.0		56.2	54.1	
8.5		15.6	35.7	K	8.0		44.8	55.1	Sj	8.3		27.8	30.9	Sj	9.5		15.5	15.1		9.8	7	20.9	23.1	
9.0		23.2	21.8	K	8.5		54.7	42.5	K	9.5		44.6	10.7		9.8		15.9	47.5		9.5		26.7	51.2	
8.9		27.8	59.8		9.0	34	10.4	3.6	K	9.5		44.8	46.6		9.5		47.7	32.3		9.6		27.6	5.9	
9.3		28.5	10.8		8.0		22.7	48.4	K	9.5		45.9	53.7		9.5		56.6	20.9		9.5		32.7	55.4	
9.8		38.4	5.0		9.0		36.0	34.5	Sj	9.7	48	2.3	54.7		9.5	59	15.8	44.3		8.3		47.0	26.0	K
6.8		42.5	25.7	K	9.5	35	0.8	52.8		9.4		6.7	48.5		9.5		31.5	14.8		9.0	8	0.1	27.4	K
6.3	22	10.1	34.0	K	10		3.7	10.1		9.5		37.6	0.6		9.0		31.9	55.6		9.2		12.8	13.6	
8.3	23	7.4	25.3	K	8.8		6.6	24.2	K	9.5		46.8	41.4		7.0		41.6	10.2	L	9.8		18.2	7.5	
9.3		13.7	43.8		9.0		37.7	17.2		8.5		54.8	49.9	K	9.5		42.9	54.2		9.2		27.9	31.2	
9.5		45.3	42.4		9.5	36	4.7	42.8		9.5	49	31.7	21.7		10	0	4.6	35.9		9.3		40.0	40.9	
8.8		50.7	25.6	K	9.2		11.7	38.8		9.5		32.7	14.1		9.5		9.5	12.9		9.5		43.4	23.2	
9.0		55.2	18.5		8.7		39.6	40.7	Sj	8.5		36.6	5.7	K	9.0		9.9	58.7	K	8.7		47.7	55.3	
9.7	24	1.9	44.4		9.1		45.4	53.2		9.6		44.8	50.4		8.3		21.2	35.0	L	8.7		58.1	20.1	K
8.7		7.9	43.1	K	9.5	37	20.4	29.0		9.2		45.8	47.3	Sj	9.5		42.8	43.0		9.0	9	0.7	57.2	
9.7		11.8	38.2		9.7		40.9	58.8		10	50	3.9	56.7		9.0		58.4	1.8		9.5		0.7	8.1	
9.3		24.5	34.0		9.6		58.8	9.4		9.5		24.7	35.6		9.0		58.9	55.9	K	9.5		8.0	24.7	
7.2		30.2	10.5	K	9.5	38	7.3	10.2		9.2	51	0.9	56.2	K	9.7	1	53.5	6.6		9.4		20.4	32.5	
9.5		38.7	43.6		9.8		23.7	40.0		9.0		8.6	24.2		9.3	2	2.7	34.4		9.8		27.2	12.4	
9.5		48.1	10.8		9.8		45.4	17.6		9.5		10.5	11.9		8.0		6.8	46.5	R	8.7		27.6	18.4	Sj
9.5	25	1.3	22.5		9.7		53.9	22.0		10		18.8	51.3		9.3		11.4	0.8		8.7		29.5	24.6	K
9.5		1.7	40.5		9.6	39	3.4	32.7		9.3		37.5	12.8		9.0		21.7	22.7	K	8.7		30.2	10.0	K
9.3		6.8	57.0		9.3		25.7	32.7		9.3		53.7	32.2		9.3		26.2	25.6		9.5		47.2	5.2	
9.5		27.2	18.5		9.0		31.7	18.0	S	9.5	52	12.8	41.0		9.5		29.5	4.4		9.8	10	6.6	54.0	
9.5		38.0	11.4		9.5		31.8	52.5		9.2		13.9	59.3		9.5		33.8	46.6		9.1		10.6	0.1	K
9.7	26	10.2	25.4		9.1		33.7	19.3		9.5		21.1	27.8		10		40.7	32.5		9.1		15.7	3.8	K
8.8		16.0	12.6		9.5		47.8	50.5		9.8		47.8	9.5		9.5		47.8	22.7		9.5		16.1	31.2	
7.5		23.8	34.4	K	9.1		52.2	24.3	K	5.7		49.5	4.8	K	9.5		53.5	11.1		9.4		21.0	48.2	
9.2		26.7	44.0		9.5	40	15.0	36.0		9.4		51.2	29.0		9.4	3	13.5	3.5		10		46.3	13.8	
9.5		48.6	30.4		9.7		33.4	9.5		10	53	6.5	39.2		9.0		21.1	34.1		9.8	11	0.4	19.3	
9.2		57.5	32.9		9.5		38.2	20.0		10		8.5	41.4		9.5		22.9	51.3		9.1		1.0	33.2	
9.3		57.7	21.1		9.4		53.2	15.2		8.3		33.9	54.3	K	9.5		24.2	26.2		9.8		1.7	29.9	
8.5	27	26.7	46.7		9.0		50.7	14.3		9.0		44.1	25.7	K	9.0		27.9	56.2		9.3		2.6	49.3	
9.0		55.7	48.3		9.4	41	0.7	38.6		10		57.7	33.8		9.5		38.3	36.5		9.3		10.7	56.3	
9.5		50.3	18.4		9.5		25.7	28.1		9.5	54	6.9	52.5		9.5		43.7	29.6		9.5		17.2	25.6	
9.5	28	10.4	29.5		9.0		45.7	21.4		9.0		30.9	55.2	Sj	9.1		45.6	23.7		8.6		27.8	40.1	
9.4		20.2	30.0		9.5	42	10.8	27.7		8.0		37.8	40.9	K	9.2		50.0	29.4		9.2		49.7	10.6	Sj
7.0		21.7	21.0		9.5		55.2	27.6		9.2		49.3	7.7		9.9		50.2	32.9		8.5		53.4	22.9	Sj
9.4		24.9	40.5		9.5	43	7.9	33.2		9.0		54.8	38.7	K	9.5		52.8	49.1		8.0		53.7	41.4	K
8.8		25.1	25.5		8.7		18.4	12.5		9.3	55	20.9	54.8		9.0		53.8	43.2		9.1		58.5	45.5	
9.1		29.5	9.2		9.5		33.8	55.5		9.5		48.5	18.4		9.4	4	2.2	30.1		9.5	12	9.2	4.9	
9.9		37.4	0.3		9.2		50.2	27.1		9.5		54.6	19.3		8.9		3.9	23.4		9.8		42.3	47.8	
9.5	29	19.7	49.8		9.5		55.7	51.5		9.0		59.7	29.6		9.2		8.0	20.3		9.1	13	15.8	14.1	K
10		23.3	18.4		9.5	44	12.7	13.9		9.5	56	13.8	43.6		9.5		14.5	5.6		9.7		18.0	29.8	
9.0		27.4	24.2	K	9.5		13.2	11.7		9.2		33.5	6.9		9.0		24.1	28.7		9.5		28.4	15.1	
9.3		28.6	30.0		8.8		19.2	30.1	K	10		42.9	26.0		9.4		32.2	33.1		9.2		43.7	16.4	K
9.5		37.9	4.6		9.5		21.7	15.3		9.5		47.5	12.3		9.5		47.0	54.6		9.1		45.1	42.0	K
9.7		58.5	32.3		9.0		37.7	40.8	Sj	9.1		50.1	50.1	K	9.0		49.1	30.5	K	9.0		46.5	56.5	
9.5	30	0.3	36.8		9.5		49.8	28.1		9.8	57	0.8	40.7		9.0		53.9	43.8	Sj	8.0		47.3	26.5	Sj
9.3		1.8	56.1		9.5		49.8	58.3		9.0		1.2	26.7	K	8.5		56.6	20.3		9.7		48.5	39.5	
9.5		23.7	44.9		9.5	45	22.0	1.7		9.5		1.6	43.6		8.3	5	13.9	36.4	B	9.4		50.1	42.0	
9.5	31	0.3	27.2		9.0		39.2	31.9	K	10		6.6	21.2		9.0		22.0	40.9	B	9.9	14	11.2	9.4	

1116: röthlich 1123: 8ʰ04 43′15″6 B_{14}, Ep. 1880.34; und derselbe 8ʰ17 43′21″7 B_4, Ep. 1883.06
1136: 24ʰ09 34′5″5 B_4, Ep. 1879.41; röthlich 1340: 22ʰ19 40′55″3 B_3, Ep. 1873.19

1401—1460

m	6h m	s	−3° ′	
9.5	14	26.5	43.8	
9.6		39.0	11.3	
9.8		57.9	54.3	
9.8	15	6.6	1.7	
9.2		14.9	39.5	
9.6		16.7	37.5	
9.8		28.4	51.4	
9.5		31.6	50.4	
9.3		32.6	51.8	
9.7		38.9	33.7	
9.5		43.7	22.3	
9.1		47.0	30.0	
7.2		47.1	12.5	K
7.8		52.6	26.7	L
9.5	16	14.8	33.5	
9.5		23.3	33.9	
9.1		30.1	51.7	
9.5		50.9	18.2	
9.4		58.4	27.6	
8.5	17	15.7	27.0	K
9.8		18.6	4.3	
9.1		27.2	54.7	K
9.5		40.6	53.5	
9.5		47.7	55.1	
7.2	18	34.1	48.5	
9.1		38.6	16.8	
9.1		44.0	50.1	
9.4		44.3	11.5	
9.2		44.8	10.8	K
7.4		56.4	26.7	K
9.2	19	3.8	4.7	
9.0		6.9	30.4	K
9.4		10.0	5.6	
9.8		19.9	17.5	
9.1		26.9	21.8	
9.5		39.4	25.5	
10		55.2	13.9	
9.0	20	22.0	47.5	
9.0		26.7	28.0	
9.3		26.8	9.1	
9.4		39.3	3.3	
9.5		39.9	13.3	
9.5		43.3	32.5	
8.8		52.0	2.6	
9.1		52.8	59.0	
9.7		54.7	32.8	
9.0	21	8.4	22.1	
9.5		11.1	37.3	
9.9		19.1	7.5	
8.5		26.2	41.9	
9.4		31.0	44.0	
9.6		37.5	21.9	
8.8		59.4	4.0	K
9.1	22	0.9	37.1	
9.4		12.6	34.2	
7.9		22.7	27.8	Sj
9.6		34.1	16.0	
9.8		42.4	1.5	
8.9		49.9	8.1	K
9.2		51.4	11.6	

1461—1520

m	6h m	s	−3° ′	
9.5	22	54.8	51.0	
8.8		58.3	40.8	
9.1	23	5.0	8.2	K
9.2		6.7	52.5	
9.1		9.5	44.2	
9.5		11.9	30.0	
9.6		13.1	10.0	
9.5		21.9	45.2	
7.9		34.1	36.9	K
9.8		44.6	41.5	
9.8		49.3	0.3	
9.8		52.1	21.5	
9.0		58.8	37.3	
10	24	23.3	59.7	
8.9		43.4	5.0	
9.8	25	10.9	52.5	
9.0		16.6	27.0	
10		19.1	3.6	
8.7		22.4	40.6	K
8.1		45.8	42.9	K
9.5	26	6.1	13.3	
9.5		6.7	0.2	
9.4		19.6	1.3	
9.3		29.9	52.7	
9.5		43.4	58.5	
9.8	27	4.8	7.0	
8.5		5.6	18.9	
9.8		9.8	3.7	
9.0		11.4	29.3	
9.8		24.4	53.1	
9.8		26.3	35.9	
9.1		29.4	46.0	
9.8		36.4	52.4	
9.2		45.9	0.7	
9.7		49.2	23.1	
9.7		52.3	31.3	
9.5	28	1.4	54.0	
9.8		12.0	6.9	
8.5		17.5	59.4	K
9.8		20.0	59.4	
8.2		21.4	51.8	K
9.5		33.8	33.4	
7.7		37.9	4.4	K
9.1		40.3	47.6	
9.4		42.6	12.4	
8.0		45.5	51.9	K
9.1	29	1.1	31.9	
9.4		6.9	42.7	
9.2		19.8	48.6	
9.0		22.1	29.1	
9.0		26.1	22.3	
9.5		34.4	51.9	
8.6		46.6	28.2	K
9.5		56.5	7.1	
9.5	30	8.0	35.1	
9.5		10.9	49.8	
9.0		28.8	34.2	
9.9		30.7	11.7	
9.1		41.3	47.4	
9.8		55.2	52.3	

1521—1580

m	6h m	s	−3° ′	
9.8	31	5.6	13.9	
9.5		12.0	56.5	
9.8		13.8	7.6	
9.2		30.0	53.1	
9.5		36.6	4.2	
10		44.0	6.5	
9.6		44.6	10.8	
9.1		52.4	40.2	
9.0		54.5	9.3	K
9.3		57.1	10.8	K
9.7	32	4.0	29.4	
9.8		23.3	43.5	
9.2		34.9	50.4	
9.5		36.4	19.8	
9.8		36.7	17.7	
9.0		44.1	14.2	
8.2	33	8.1	14.5	K
9.1		9.2	24.3	K
10		11.6	29.3	
9.2		13.9	42.5	
9.5		15.0	55.1	
8.7		16.9	23.4	K
9.5		17.2	0.9	
9.0		25.5	56.0	
9.3		27.9	56.0	
9.1		29.4	47.3	
9.8		39.6	20.8	
9.8		41.6	21.7	
9.5		43.8	32.4	
9.6		49.1	33.1	
9.2	34	13.0	29.7	
9.4		14.8	54.4	
8.2		18.8	50.9	Sj
9.4		19.4	0.3	
8.2	35	2.5	50.4	K
9.0		8.1	19.5	
8.5		15.0	10.2	K
9.7		15.9	55.6	
9.7		23.9	27.2	
7.7		25.4	41.7	K
9.5		29.9	0.9	
9.0		34.1	41.6	
9.5		54.5	7.0	
9.2	36	8.7	44.7	
9.4		18.1	15.6	
9.8		21.1	34.0	
10		41.9	41.2	
9.6		58.6	54.3	
10	37	2.8	5.2	
9.9		6.2	51.9	
9.8		11.1	23.2	
9.5		18.8	57.1	
9.7		47.5	48.3	
9.6		56.6	48.1	
9.5		58.7	5.0	
8.9	38	3.7	48.3	K
9.5		17.6	32.0	
9.8		22.7	26.1	
9.8		32.5	10.9	
9.9		37.6	18.2	

1581—1640

m	6h m	s	−3° ′	
8.8	38	46.1	39.2	K
9.5		52.3	58.7	
9.3		55.0	5.9	
9.2	39	11.9	4.2	
9.5		25.2	48.2	
9.9		29.2	51.3	
9.3		31.5	28.1	
9.3		33.7	28.7	
9.6		48.1	32.1	
9.5		54.6	37.5	
9.1	40	1.3	37.1	
9.5		1.7	30.6	
9.5		14.3	57.3	
9.5		14.6	1.9	
9.1		17.5	10.8	
9.4		33.1	4.4	
9.5		59.5	6.3	
9.4	41	4.2	1.3	
9.4		5.5	5.4	
8.5		15.6	20.3	
9.8		22.6	37.2	
9.2		23.7	4.4	
7.8		24.5	54.9	L
9.8		31.7	45.1	
8.7		46.5	22.3	
9.0		57.8	10.3	
9.2	42	19.4	44.9	
9.9		30.3	39.6	
10		31.0	4.0	
9.1		32.7	27.4	
9.7		33.1	5.1	
9.2		46.2	42.2	K
9.5		55.8	54.4	
9.8	43	2.8	3.5	
9.2		8.0	37.2	
10		32.0	5.5	
8.8		44.7	42.7	K
9.8		51.7	30.4	
9.4	44	2.3	31.9	
8.0		4.5	20.4	L
9.0		8.0	56.5	K
9.4		9.3	54.5	
9.5		10.0	22.6	
9.2		29.4	9.1	
9.5		31.3	28.8	
9.8		39.3	53.4	
10		51.4	58.1	
10	45	0.1	30.4	
9.2		23.7	1.0	
8.8		30.5	30.6	
9.7		30.5	2.5	
9.7		36.2	47.1	
9.5		46.1	34.5	
9.7		57.2	35.5	
9.7	46	3.3	4.4	
9.5		30.8	7.5	
9.5		37.9	59.7	
9.0		59.0	22.9	
9.8	47	10.6	8.6	
10		14.0	55.9	

1641—1700

m	6h m	s	−3° ′	
8.2	47	20.3	55.4	K
9.0		43.4	9.5	
9.1		46.3	31.4	
9.4		47.0	48.7	
9.8	48	4.3	26.3	
9.8		5.1	28.7	
9.8		33.2	45.1	
9.2		36.7	52.0	
9.5		39.4	15.7	
8.6		46.9	1.1	K
8.7	49	5.9	37.4	K
9.4		10.4	26.9	
8.5		21.2	36.2	K
9.5		29.8	57.7	
8.5		32.2	28.0	K
9.4		37.0	16.6	
7.6		38.2	30.5	K
9.2		44.5	17.5	
9.5		46.6	39.4	
9.5		52.1	38.2	
9.8		56.9	7.1	
9.9		58.5	8.5	
10	50	15.6	16.8	
8.7		16.5	30.6	K
9.9		19.2	16.4	
9.7		20.0	25.6	
9.5		29.6	0.6	
9.4		39.0	34.5	
9.5	51	21.8	55.5	
9.5		29.6	38.5	
9.4		36.9	17.9	
8.0		44.2	49.2	L
9.4		47.4	17.6	
9.1		54.0	2.5	L
9.5	52	2.1	36.1	
9.7		6.1	27.6	
9.3		30.3	27.8	
9.6		38.3	0.8	
9.5		44.0	25.9	
9.0		50.0	19.3	
9.5	53	17.9	57.3	
9.3		29.5	30.2	Sj
9.5		33.7	46.0	
9.8		36.2	42.0	
7.7		46.4	3.3	K
8.5		52.6	46.0	K
9.3	54	1.1	41.0	
9.5		5.2	15.1	
9.5		9.4	13.4	
9.2		13.8	59.4	
9.3		18.8	0.2	
10		41.9	11.0	
9.0		51.2	49.3	
7.0		52.9	33.0	L
9.1		56.2	4.2	
9.5	55	3.0	22.4	
9.8		8.4	24.9	
8.7		10.7	15.2	K
9.0		10.8	7.5	K
9.5		11.6	41.2	

1701—1760					1761—1820					1821—1880					1881—1940					1941—2000				
	6h—7h		−3°			7h		−3°			7h		−3°			7h		−3°			7h		−3°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.6	55	14.8	29.6		9.8	1	21.9	11.7		9.1	8	55.8	25.1		9.7	17	5.7	22.1		9.8	25	43.2	28.1	
9.6		28.9	36.9		8.6		35.7	50.1	K	9.8	9	11.5	31.0		9.7		5.9	32.7		9.5		51.6	52.1	
9.4	56	0.4	8.3		9.7		37.7	19.8		9.5		16.2	44.5		9.4		17.2	43.6		9.1		51.7	16.4	Sj
9.0		5.3	48.8	Sj	9.7		48.9	19.1		8.2		38.8	27.2	Sj	9.7		20.8	3.0		9.4		58.4	43.2	
9.5		11.2	55.1		9.8		51.6	35.6		10	10	3.2	32.6		9.5		25.6	32.7		9.8		59.5	42.8	
9.5		12.7	39.4		8.8		59.5	8.3	Sj	8.7		4.6	37.5	K	8.7		40.4	57.1	K	9.5	26	2.5	22.8	
10		32.8	22.0		9.8	2	12.1	37.8		9.4		8.9	36.4		9.5	18	2.5	23.7		10		4.9	46.6	
10		33.6	48.6		9.5		13.8	55.9		8.8		13.8	1.3		9.5		3.4	42.4		9.8		7.5	32.4	
9.2		37.7	47.8		9.5		17.2	46.0		9.0		19.2	29.9		9.5		6.9	14.3		9.8		14.6	50.2	
9.5		43.7	51.5		8.9		26.1	1.1	K	9.8		21.1	35.3		9.1		14.9	33.9	K	9.8		18.9	9.4	
9.4		45.1	7.0		10		47.7	48.1		7.9		21.8	29.6	K	9.5		25.3	53.2		9.1		26.0	16.1	
9.1		49.1	5.1		9.9	3	2.9	34.1		9.4		24.7	38.7		9.0		36.7	44.3	K	9.8		38.3	30.9	
9.0		58.0	2.6		9.0		11.7	51.9	K	9.5		30.2	51.2		9.5		43.2	42.0		9.2		48.0	25.4	
9.5	57	11.7	49.5		9.0		13.3	55.0	K	9.5		33.8	12.4		9.6		59.0	51.1		9.0		48.1	26.5	
9.5		14.3	55.7		9.5		14.0	13.7		9.4		50.8	31.0		9.5	19	16.9	5.4		9.6	27	1.6	51.8	
9.5		14.5	37.2		9.6		16.3	55.0		9.0		55.9	37.0	Sj	9.1		23.6	38.6		9.4		1.9	50.3	
9.2		30.2	51.4		9.3		26.2	48.6		9.3	11	2.1	0.9		9.5		35.3	17.8		9.4		3.7	1.1	
9.6		33.8	28.8	—	9.5		39.7	46.3		8.8		6.5	21.2	K	9.7		38.9	0.8		9.5		21.9	23.7	
9.3		34.6	40.5		9.5		40.9	0.2		9.4		12.1	57.9		9.1		40.8	6.6		8.4		30.0	19.3	Sj
9.3		43.1	42.9		8.8		44.1	38.7	L	9.4		21.4	1.0		9.5		44.3	4.6		9.8		46.9	39.3	
10	58	1.2	55.0		7.2		49.1	40.0	L	9.5		38.9	32.4		9.5		54.1	40.0		10		55.9	15.4	
9.3		5.1	7.0		9.8		54.1	5.0		9.5		51.9	58.4		9.5	20	5.6	28.6		9.7	28	6.7	40.0	
9.4		8.2	47.4		9.4	4	0.1	12.5		9.5		53.3	48.8		9.5		18.0	22.1		9.1		13.1	34.2	
9.7		13.5	7.1		9.1		1.7	14.7	Sj	9.2		54.5	5.1		9.5		19.7	0.4		9.5		19.4	36.4	
9.4		14.4	44.0	Sj	9.4		8.8	53.9		9.8	12	0.0	9.1		9.9		32.1	55.5		9.5		29.1	55.6	
9.4		26.4	42.2		9.3		9.2	7.5		9.1		2.7	43.9	Sj	9.4		47.4	42.5		8.7		32.1	52.7	L
9.1		50.7	50.6	K	9.8		10.4	14.5		8.3		23.0	21.0	L	9.1		48.9	22.8	K	9.1		43.1	15.4	
9.4		56.4	54.8		9.2		17.7	46.0		9.8		25.3	9.8		9.4	21	4.9	7.9		8.2		43.1	2.7	B
9.5		57.3	55.7		8.3		33.8	54.1	K	9.5		48.9	52.2		9.6		14.0	34.6		9.6	29	3.4	18.3	
10	59	2.1	23.7		9.3		34.3	22.0		7.0		53.9	39.3	L	9.5		24.6	9.0		9.2		7.3	17.5	
9.8		3.5	36.1		9.5	5	0.6	4.0		9.5	13	10.1	22.2		9.7		28.1	26.1		9.0		11.1	0.4	
8.3		13.8	3.1	Sj	9.3		3.3	25.4		10		39.1	36.2		7.8		42.0	32.7	K	8.7		15.9	37.2	K
9.0		20.9	41.3	K	9.5		5.4	57.8		8.8		53.9	32.6	K	9.5		42.4	14.8		9.2		18.2	15.2	
9.8		22.2	0.4		9.3		9.6	59.1		8.5		54.5	5.8	K	9.3		43.9	3.4		9.0		27.8	54.1	
8.8		24.3	26.0	K	9.5		27.7	1.2		9.4		59.9	56.0		9.6		55.1	5.0		9.3		39.3	47.5	
10		27.4	3.8		9.8		35.4	12.6		8.8	14	0.8	10.8	K	9.8		56.4	11.9		9.7		46.7	7.6	
9.8		50.1	5.2		9.5		39.6	2.3		9.8		2.9	56.5		9.8	22	1.8	36.0		8.8		57.1	34.6	K
9.8		50.6	15.6		9.5		48.9	36.2		8.0		7.9	1.4	K	9.5		39.0	50.7		9.8	30	3.3	45.4	
9.8		52.9	24.4		9.2		53.1	4.2		9.5		24.7	42.6		9.0		40.4	40.9		5.3		4.8	47.3	K
9.8		53.8	35.7		9.0	6	32.7	42.6	Sj	9.8		36.9	35.1		9.0		47.6	27.6		9.5		7.8	22.3	
9.5		57.8	54.8		8.6		35.7	16.4	Sj	10		40.7	41.7		9.0	23	4.6	59.5		9.6		8.6	51.8	
9.0		58.4	0.1	K	10		37.1	27.2		9.7		41.5	5.1		9.8		11.5	3.2		9.8		14.0	28.2	
9.5	0	4.8	57.5		8.0		42.8	28.8	K	9.6		43.3	12.5		9.6		25.1	13.7		9.1		26.9	14.4	
9.5		5.2	50.9		6.5		57.9	39.7	K	9.3		48.4	20.0		9.5		26.6	10.8		10		27.0	48.6	
9.5		11.9	3.8		9.7		59.8	26.9		8.8		53.7	45.4	Sj	9.3		37.4	38.1		10		28.3	13.6	
9.8		19.8	52.6		9.7	7	1.8	3.8		9.3	15	10.6	10.9		9.5		40.9	20.3		9.2		29.9	28.1	
10		23.1	31.0		9.5		4.9	46.8		9.8		12.8	25.9		9.5		47.3	14.2		8.2		41.3	8.5	K
9.7		28.2	29.6		9.8		7.9	48.4		10		14.6	55.5		9.1		47.5	21.4		9.8		55.5	11.8	
9.1		30.8	54.2		9.5		23.0	26.2		9.5		24.7	45.0		9.5		58.7	13.1		10		56.7	41.4	
8.3		33.0	9.4	K	9.5		26.6	41.7		9.3		39.8	24.2		9.8	24	5.6	50.8		9.4		58.2	26.2	
8.7		43.9	57.4	Sj	9.8		28.9	0.9		8.0		45.7	37.1	L	9.4		16.2	56.9		9.4	31	14.5	53.0	
9.7		47.4	25.1		9.5		33.0	23.0		10		51.9	59.7		9.5		28.0	45.0		9.5		37.6	24.8	
9.4		47.9	11.1		9.5		52.4	25.6		9.2		54.4	56.8		9.5		30.0	28.8		9.5		47.1	48.1	
9.7		48.9	26.4		9.4		57.4	1.6		9.6	16	3.8	5.3		9.2		31.7	18.1		9.3		56.6	25.7	
9.1		53.7	20.6		9.3		58.6	5.6		9.0		5.7	44.6		8.3		46.4	42.2	K	9.3	32	0.1	43.3	
9.8		56.2	6.9		9.8	8	2.2	49.0		9.4		12.9	0.2		9.8	25	14.5	24.0		9.8		19.7	57.0	
8.7		57.4	3.9	K	9.3		23.8	26.2		9.3		25.3	48.4		10		27.8	3.8		9.5		25.6	36.8	
9.7		58.6	35.7		8.5		26.9	7.6	K	7.5		48.4	42.3	L	9.6		28.8	6.0		9.8		26.9	18.0	
9.7		59.5	30.5		9.5		40.4	59.8		9.3		50.7	16.1		9.8		30.4	36.4		9.3		37.4	31.7	
9.4	1	12.0	34.4		9.1		41.3	40.4	Sj	9.8		51.9	53.2		9.8		40.8	31.9		9.2		41.9	50.6	

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	7h	—3°			7h	—3°			7h	—3°			7h—8h	—3°			8h	—3°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
7.7	32 44.3	15.4	Sj	8.2	39 30.8	32.0	L	9.7	48 22.0	2.3		9.5	55 25.7	51.6		10	4 3.8	45.7	
9.1	47.6	15.7	Sj	8.7	41.7	19.5	K	9.1	25.7	5.1		9.5	29.9	0.3		9.5	4.8	55.3	
8.6	50.3	19.2	K	8.8	40 1.6	52.7	Sj	9.5	52.0	20.0		10	35.2	56.3		9.4	21.7	24.0	
10	33 7.6	43.7		9.5	22.2	12.2		8.7	55.3	3.1	K	9.8	43.1	29.5		9.5	22.8	7.3	
9.8	10.2	58.4		8.0	33.1	10.5	Sj	9.5	49 15.3	35.0		9.4	48.6	59.0		8.8	23.7	22.2	
9.8	10.5	20.5		9.5	43.9	1.4		9.5	16.4	38.1		9.8	52.9	17.1		9.8	26.7	53.2	
9.0	15.4	22.2	K	9.3	46.0	49.8		9.4	24.2	18.3		9.8	53.7	34.5		9.3	38.4	0.2	
9.5	17.6	17.7		9.0	50.3	35.7	K	9.8	28.9	6.7		9.5	55.1	29.7		9.7	40.7	4.3	
9.8	27.1	39.9		9.4	55.5	58.7		7.5	38.5	4.1	Sj	9.0	56 2.6	50.5		9.5	47.7	21.6	
9.8	44.1	29.4		9.5	41 1.1	53.1		9.3	39.7	29.3		9.8	10.7	8.6		9.8	5 4.7	2.8	
9.8	53.5	23.1		9.5	9.0	52.9		9.9	41.4	8.8		8.5	13.1	4.0	K	9.8	5.5	37.0	
9.5	55.6	27.8		10	11.9	16.5		9.0	46.4	17.7		10	34.1	44.5		9.0	6.9	30.9	K
9.5	34 7.1	54.6		9.5	13.4	43.3		9.2	54.1	56.5		9.8	37.0	13.6		9.6	14.3	2.0	
9.6	26.0	0.7		8.9	19.5	26.5		9.2	56.6	11.3		9.1	48.0	14.1		9.5	31.5	48.6	
9.5	35.5	50.4		9.1	21.3	3.8		9.5	50 2.5	22.0		9.0	50.9	30.9		9.2	41.6	49.1	
9.1	45.8	31.7		9.8	26.9	49.8		9.7	2.6	25.1		8.7	57 4.6	8.6	K	9.0	49.9	44.0	
9.0	51.3	29.8		9.3	28.0	59.6		9.7	3.3	27.4		9.2	9.9	36.1		9.5	51.6	19.8	
9.0	56.5	11.1	L	9.3	35.3	13.7		9.5	28.8	52.3		9.0	12.1	34.7	K	9.1	6 0.0	44.0	
8.5	57.3	10.7	L	9.6	52.8	42.7		9.7	39.2	31.5		8.7	25.4	25.9		9.5	1.6	29.4	
8.9	35 1.0	21.5		9.8	52.9	34.7		9.5	54.3	1.1		9.6	32.0	13.1		8.7	10.8	38.2	Sj
9.8	7.6	54.3		9.4	42 23.0	59.8		9.5	58.8	43.2		9.0	43.0	20.0		9.3	26.0	35.2	
10	14.9	56.7		9.0	31.0	3.4		9.4	51 3.4	7.6		7.0	43.3	5.2	K	9.5	29.5	47.8	
8.3	20.7	41.2	K	9.4	56.8	30.0		9.1	6.0	24.9		9.8	58.8	27.9		9.5	40.2	11.0	
9.9	34.2	30.0		9.8	43 4.9	21.5		9.5	8.8	43.3		9.2	58 9.8	26.0		8.9	40.4	37.7	
8.7	40.0	54.8	Sj	10	6.6	36.8		9.8	11.4	27.0		9.7	17.2	21.3		9.9	40.5	20.4	
9.4	53.2	0.2		9.7	16.0	27.9		8.0	14.2	14.7	K	8.9	18.5	24.4	K	9.6	40.8	22.0	
9.5	54.6	26.0		7.3	16.2	13.9	Sj	8.0	20.1	28.8	K	9.1	46.1	48.1		9.3	50.6	9.9	
7.5	36 1.4	47.9	K	9.8	16.5	49.3		9.4	36.4	33.6		8.7	59 17.2	5.6		7.3	7 9.2	23.6	L
9.9	3.9	22.8		9.4	26.6	59.0		9.8	36.6	7.0		9.5	27.3	56.4		9.5	9.5	45.0	
9.4	7.2	40.4		9.5	28.0	21.3		9.3	37.2	54.3		9.5	38.2	53.7		9.5	12.0	15.1	
9.4	22.1	36.9		9.1	28.4	26.3	Sj	7.0	50.4	56.2	K	8.2	49.2	35.8	L	9.6	25.7	34.3	
9.5	24.3	13.6		9.8	32.8	44.6		9.4	52 2.2	0.1		9.0	49.8	26.9		9.5	43.6	52.1	
9.8	35.9	45.7		8.9	34.2	12.3	K	9.5	2.6	8.1		9.4	0 7.4	43.1		9.4	52.8	25.8	
9.8	53.1	30.8		9.8	43.2	39.2		9.3	17.0	25.9		9.7	15.9	8.6		9.2	53.2	26.8	
10	37 0.2	56.4		9.4	47.1	36.8		9.4	22.5	44.3		10	34.8	30.6		9.5	56.8	16.8	
9.4	5.0	14.0		9.1	48.0	20.1		9.7	25.9	29.7		8.0	45.2	18.2		10	8 0.5	30.2	
9.4	5.1	44.0		9.6	44 23.3	5.4		4.9	28.4	16.8	K	8.2	45.8	57.2	K	9.5	18.4	52.6	
9.5	8.7	13.8		9.5	42.0	43.6		9.5	34.3	4.7		9.4	1 10.8	29.4		9.1	24.8	7.6	
9.2	28.4	28.9		9.5	43.9	29.6		9.7	34.4	14.0		9.6	20.2	52.5		9.5	28.3	37.5	
9.5	29.5	21.3		9.8	56.0	19.6		9.5	52.3	29.6		9.4	40.6	30.3		9.3	32.0	16.2	
9.4	30.5	17.2		9.8	56.0	25.8		9.8	56.6	19.2		9.8	44.7	34.5		9.5	38.4	43.5	
9.1	38.6	44.8		9.4	45 1.5	33.2		9.0	53 5.7	4.3	Sj	9.6	50.1	2.2		9.6	39.8	7.8	
9.2	49.0	17.8		9.8	8.1	58.4		8.8	7.1	34.3		10	55.7	15.3		9.8	9 7.4	1.2	
8.7	53.0	19.0	Sj	9.7	15.4	9.2		9.1	8.3	17.8		9.5	56.0	45.7		9.3	37.6	10.7	
9.9	38 24.4	13.9		9.8	22.9	3.4		9.6	9.8	7.4		9.2	2 0.6	46.9		9.5	42.5	48.9	
10	32.9	48.5		8.7	34.8	32.3	K	9.3	13.5	46.1		9.7	7.7	17.7		8.8	58.0	49.1	
9.6	34.0	49.8		8.9	39.2	34.7	K	10	27.9	40.4		9.4	20.6	0.2		9.3	10 2.9	3.8	
9.5	35.2	56.4		9.4	46 6.9	3.8		9.6	31.0	32.4		8.0	35.9	44.0	K	7.7	16.0	31.7	
9.1	35.3	45.7		9.8	14.4	49.7		9.2	36.9	52.9		8.8	37.5	58.1	K	9.5	21.5	34.1	
9.8	47.4	47.0		9.0	35.4	19.8		9.5	38.4	1.3		9.5	56.9	11.4		9.0	32.3	55.3	
9.5	48.5	49.7		8.3	49.1	55.9	K	8.0	57.9	7.3		9.6	59.6	51.8		8.5	47.7	34.1	K
9.7	52.7	7.3		7.8	57.7	9.9	Sj	9.5	54 7.5	26.9		8.7	3 3.3	11.4	L	10	11 17.9	34.7	
8.0	56.6	36.7	K	9.1	47 17.1	32.1	K	9.3	10.9	0.4		9.4	5.8	7.6		9.7	25.7	32.7	
9.3	39 0.2	56.5		9.5	21.5	30.8		9.4	22.4	15.7		9.4	13.1	6.9		9.2	26.3	34.9	
9.1	3.3	43.5		10	28.6	58.1		9.4	27.0	23.0		9.8	22.2	3.2		8.2	34.2	38.1	K
9.3	3.5	25.7		9.1	36.3	18.4		8.3	36.5	8.8		9.1	48.2	22.0	Sj	9.5	41.0	26.7	
9.3	15.2	26.4		9.2	40.0	51.6		10	53.9	52.9		9.6	48.6	7.4		9.5	42.2	12.7	
9.1	16.7	40.8		9.2	50.3	46.0		9.1	55.8	37.9		9.5	52.0	1.9		9.7	42.9	4.0	
9.0	22.8	10.5	K	9.8	58.6	11.6		9.3	59.7	34.6		8.7	59.4	59.7		9.5	58.7	52.1	
8.5	29.9	20.0	K	8.6	48 3.6	37.7	K	8.5	55 19.3	55.2	Sj	8.5	59.8	38.8	K	9.8	12 1.6	21.8	

2301—2360				2361—2420				2421—2480				2481—2540				2541—2600			
	8h	−3°			8h	−3°			8h	−3°			8h	−3°			8h—9h	−3°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.0	12 26.8	41.2	K	9.8	21 22.6	23.8		9.7	31 37.4	11.5		9.6	42 31.1	13.9		9.2	55 30.1	8.5	K
9.5	34.5	55.2		8.8	33.9	45.7	K	9.1	44.7	5.1		9.1	33.6	14.4		10	50.8	58.0	
9.8	36.0	26.5		9.5	34.2	38.5		9.6	54.5	49.8		9.5	35.4	33.0		9.7	57.6	30.9	
9.7	36.9	3.8		9.7	45.0	28.5		9.4	58.7	5.4		9.5	35.8	10.4		9.2	56 4.1	45.6	
9.8	40.7	16.4		9.5	22 4.2	22.4		9.0	32 2.9	11.0		9.6	43 7.2	50.3		8.0	6.6	52.3	K
9.0	41.0	19.4	Sj	9.7	9.1	30.1		9.1	7.9	59.7	M	7.0	8.7	39.5	L	9.8	12.0	28.3	
9.5	51.8	42.8		9.8	18.9	32.9		8.2	11.1	31.1	L	9.1	17.1	21.8		8.3	24.2	51.2	K
9.1	52.6	25.5		8.5	20.7	24.4	Sj	9.8	21.3	11.0		9.2	35.7	50.1		9.3	25.3	58.2	
9.8	13 30.4	16.3		9.7	22.4	50.1		9.7	36.2	50.0		9.8	51.4	37.1		9.0	28.0	35.1	
9.1	37.3	41.2		9.4	34.7	47.2		8.8	59.0	17.7	M	9.4	57.6	25.1		9.0	30.4	36.6	
9.6	38.7	28.9		9.5	43.2	15.7		9.3	33 9.7	47.5		10	44 33.3	56.5		10	31.4	32.0	
9.3	39.5	40.8		9.1	46.4	56.3	Sj	8.3	19.2	28.5	K	9.5	46.1	59.3		9.8	39.1	3.5	
9.8	46.9	33.7		9.8	23 22.8	8.1		9.1	23.0	39.1	M	10	45 23.2	53.3		8.4	57 1.3	10.2	L
8.4	50.3	57.5		9.8	28.3	7.6		8.5	32.1	42.6	K	9.4	44.3	57.3		9.5	7.2	51.6	
9.0	54.1	50.0		8.9	32.9	22.0		9.8	39.2	30.1		9.5	47.7	26.0		8.3	9.8	26.7	L
9.8	58.8	9.6		10	51.9	1.1		8.9	41.4	40.0	M	8.5	51.6	44.1	M	9.7	10.9	51.9	
9.0	14 25.4	59.7	K	9.5	53.1	21.8		10	42.3	13.1		8.7	56.8	37.0		9.3	17.7	12.0	
9.0	46.3	43.0		9.9	55.6	34.1		9.1	34 16.8	0.4		9.5	46 8.4	15.5		9.5	37.3	11.6	
9.5	47.2	37.9		9.5	24 9.7	7.3		10	31.6	20.5		9.4	16.6	22.8		10	37.5	41.5	
9.5	53.1	20.8		9.0	32.0	18.0		10	34.0	30.0		9.0	50.7	6.5		10	43.0	59.5	
9.2	54.7	27.8		9.1	25 10.5	3.7		9.3	53.4	23.3		10	47 2.8	57.6		9.8	43.4	7.1	
9.5	15 1.5	0.4		9.5	13.5	16.3		9.5	35 0.1	20.0		9.3	20.1	46.1		8.2	44.6	24.9	L
9.8	17.8	59.7		9.5	24.0	17.7		9.4	6.8	54.0		8.2	37.6	25.7	K	7.3	48.3	11.8	K
8.0	42.5	46.9	Sj	8.5	32.5	34.6	K	8.8	16.7	27.2	M	9.3	38.5	41.2		9.2	49.0	35.4	
9.5	43.0	7.9		9.0	37.4	22.1		7.2	23.2	53.5	K	9.4	39.9	50.2		9.5	53.2	26.2	
8.8	44.8	27.5		8.9	37.7	53.0	Sj	9.9	27.0	55.4		6.6	41.2	0.4	L	9.0	55.0	42.6	
8.4	16 16.2	57.7	K	9.8	26 2.1	59.8		9.1	33.9	3.8		9.5	43.3	54.2		9.2	56.6	44.8	
9.4	32.3	59.8		9.2	4.6	4.2		9.5	35.4	23.1		9.3	45.7	6.6		9.5	58 5.0	12.3	
9.8	34.8	2.6		9.2	18.1	44.1		10	40.8	55.1		8.2	49.5	21.8	K	9.1	15.5	22.8	
9.4	34.9	31.2		9.1	25.1	10.0		10	43.0	39.5		10	48 9.6	50.0		8.2	16.5	0.1	K
9.2	56.7	38.0		9.8	25.7	6.5		9.6	36 9.9	4.0		9.1	14.7	31.3	K	9.2	49.7	51.6	
9.8	17 16.8	8.8		9.5	36.0	16.6		8.8	19.4	13.8	K	9.4	23.1	24.5		9.3	59 0.3	3.9	
6.0	20.7	17.1	L	9.3	45.0	28.7		9.2	29.4	57.6	Sj	9.4	38.0	39.4		9.0	26.3	35.2	Sj
9.1	21.0	27.1		9.0	47.3	12.1		7.8	49.0	41.0	K	9.5	49 57.9	18.0		9.3	44.6	31.5	
9.6	43.1	43.2		10	53.9	0.6		9.8	55.3	11.0		9.5	50 1.0	41.0		9.6	45.4	33.0	
9.9	45.5	42.4		9.8	57.9	56.0		9.1	37 0.1	24.0		9.8	8.8	13.4		9.5	52.1	14.0	
8.9	18 0.6	21.7	L	9.2	27 16.3	25.7		9.4	7.1	48.2		9.2	34.7	30.6		8.6	53.0	22.4	M
9.3	11.4	24.9		8.5	33.2	39.5	K	9.1	42.3	30.5	K	9.8	39.2	37.1		9.6	58.8	0.8	
3.7	25.0	26.3	K	9.3	43.9	14.2		9.1	49.2	21.8		9.4	46.5	22.3		8.8	0 14.2	52.9	K
8.3	31.5	1.0	K	9.0	53.9	33.5		9.3	58.0	22.7		8.2	47.5	1.2	L	9.5	43.3	58.2	
7.5	33.9	42.5	Sj	9.1	54.0	17.6		9.7	58.5	41.0		9.7	51 11.9	58.3		9.2	1 3.0	41.5	
9.1	47.1	29.9		9.3	28 10.3	53.5	Sj	8.4	38 7.7	9.4		8.5	14.6	44.5		10	35.4	19.5	
9.3	49.8	10.7		9.9	29 6.3	16.5		9.8	9.5	21.2		9.1	39.3	59.4		10	42.0	24.1	
9.1	19 8.8	36.0		9.3	8.1	21.5		9.3	29.3	53.0		9.2	39.4	16.2		9.8	42.6	6.1	
6.2	11.5	30.8	K	9.2	11.1	31.9	K	9.3	36.6	43.8		9.2	50.9	26.9		9.6	49.2	10.7	
9.5	18.7	53.0		8.5	15.8	0.7	L	9.7	54.4	19.2		9.7	58.4	57.4		9.6	59.0	10.0	
9.8	19.0	46.6		9.8	36.7	14.4		10	55.3	1.2		9.2	52 13.9	55.0		9.5	2 13.1	8.4	
9.4	24.3	57.1		8.3	38.2	33.9	K	9.9	39 4.2	29.5		9.8	36.6	27.3		9.3	13.3	0.0	
9.3	35.1	25.4		8.9	55.4	59.5	K	9.0	23.9	26.0	K	8.8	59.3	54.7		8.8	21.9	26.6	M
9.0	46.4	44.7	K	9.0	55.5	29.9	K	8.7	32.6	4.1	K	9.9	53 11.4	16.9		10	37.4	36.5	
9.8	52.4	10.9		9.7	59.7	41.0		10	57.5	0.2		9.4	30.6	48.5		9.3	39.3	47.4	
9.4	59.5	5.8		9.5	30 28.3	13.1		9.2	40 12.6	42.5		8.0	39.3	57.1	K	9.3	50.2	36.2	M
8.3	59.7	3.1	Sj	9.5	33.8	51.7		8.2	17.9	25.7	K	9.3	46.6	6.3		9.0	3 4.5	54.1	K
9.8	20 10.2	5.4		9.8	47.6	29.5		9.0	23.0	16.9	K	9.9	49.6	57.7		8.3	8.8	11.5	K
9.5	21.6	21.2		9.4	57.3	9.9		9.7	30.2	7.5	K	6.8	54 16.2	53.5	K	9.5	11.5	35.2	
7.0	27.3	56.4	Sj	9.3	58.4	58.7		8.2	32.0	30.5	K	9.5	28.3	59.5		10	16.7	27.1	
9.7	46.6	32.5		9.7	31 6.4	58.5		9.5	41 22.0	7.7		9.8	34.7	30.9		10	27.5	45.2	
9.7	53.5	37.3		9.5	26.9	24.4		8.3	22.8	59.4	Sj	10	40.5	39.6		9.9	33.3	13.0	
9.4	21 6.8	0.9		9.5	29.7	42.2		9.5	25.9	9.3		9.1	55 22.4	39.3		9.4	54.4	41.2	
8.2	8.7	48.6	K	8.8	35.6	24.8	K	9.8	44.6	42.5		9.1	24.0	24.4	K	9.0	59.0	20.1	M

2601—2660

m	9h m s	—3° ′	
9.4	4 12.6	37.6	
9.3	21.7	54.1	
9.3	41.5	43.5	
7.4	46.3	58.0	K
9.2	5 3.4	50.1	
10	12.9	7.3	
10	14.9	15.8	
9.3	17.9	27.4	
9.8	21.9	38.1	
9.6	25.1	25.0	
9.0	6 9.5	47.1	
9.2	19.8	20.7	K
9.8	22.5	23.1	
8.9	22.7	18.1	K
9.7	24.9	27.2	
10	25.4	18.0	
9.0	27.3	42.2	
9.8	36.1	48.3	
9.3	7 0.7	54.5	
9.5	2.9	24.3	
9.8	3.6	49.7	
8.8	3.6	45.0	
8.0	28.8	56.8	K
9.8	44.0	44.1	
8.8	48.4	10.9	K
9.1	48.6	15.2	
9.3	51.5	45.2	
8.5	54.5	22.0	K
9.5	56.3	32.9	
9.3	8 6.9	27.4	
9.2	14.6	29.7	
9.5	15.2	9.0	
10	21.8	56.3	
9.3	22.4	17.3	
8.0	9 3.3	56.0	K
8.0	11.1	48.0	K
10	12.9	43.4	
9.5	14.1	17.2	
9.2	17.7	27.6	
10	31.6	18.2	
9.0	35.7	36.3	
9.8	55.5	45.3	
9.5	59.7	35.0	
9.1	10 1.3	35.9	
9.1	8.9	3.2	
10	28.4	51.7	
9.9	52.0	4.2	
9.4	11 2.7	7.5	
9.4	52.2	54.4	
9.0	55.6	50.7	
9.3	12 2.7	4.4	
9.5	13.3	2.1	
9.0	13.5	5.8	K
8.5	15.8	45.0	
8.5	23.2	55.9	
9.0	24.6	34.7	
9.4	32.7	6.5	
8.8	13 4.3	59.6	
9.7	42.5	42.0	
8.8	14 7.8	38.5	

2661—2720

m	9h m s	—3° ′	
8.3	14 25.7	55.0	K
9.8	45.2	17.4	
9.9	59.3	6.6	
9.5	15 32.8	59.2	
9.5	44.9	41.8	
9.5	48.6	5.7	
8.7	16 40.7	54.9	M
9.4	44.5	23.5	
9.7	59.4	42.6	
9.7	17 22.0	12.7	
9.4	24.0	56.7	
7.0	36.4	39.7	L
9.5	18 3.5	23.8	
9.3	27.5	36.4	
9.6	28.7	11.5	
9.7	43.6	44.5	
9.8	52.2	47.8	
9.7	54.3	39.8	
9.3	55.5	50.4	
9.8	19 18.3	52.5	
9.8	32.6	43.0	
9.2	32.7	47.2	
9.7	20 0.8	52.9	
8.3	7.4	56.1	K
7.5	14.9	10.0	K
9.6	50.9	6.0	
9.8	21 2.0	35.7	
9.5	16.1	9.8	
8.8	38.6	16.7	
9.6	41.4	0.4	
9.8	54.7	47.9	
8.5	22 0.7	29.7	
6.5	15.5	36.6	Sj
9.2	48.2	10.0	K
9.0	23 7.9	10.1	K
9.4	9.5	27.1	
9.4	15.2	9.3	
7.3	24.0	25.9	K
9.1	44.7	27.9	K
8.4	53.8	52.2	
8.5	24 44.2	46.3	K
9.4	50.7	27.6	
9.6	25 2.4	29.3	
8.8	3.0	47.1	K
9.4	50.1	15.2	
10	50.3	55.6	
8.3	26 0.2	45.7	Sj
10	3.4	3.0	
9.4	10.9	4.6	
9.5	17.9	11.2	
9.8	31.2	46.7	
9.5	42.0	10.0	
8.2	27 3.5	7.9	K
8.9	16.8	22.3	
9.0	22.2	50.9	K
9.8	52.3	21.6	
9.0	58.5	38.4	M
9.3	28 8.6	18.3	
9.8	35.6	41.7	
9.8	43.0	7.5	

2721—2780

m	9h m s	—3° ′	
9.8	28 46.1	40.6	
9.5	52.3	55.5	
9.1	29 12.1	25.5	
9.1	24.8	56.4	
9.8	26.5	8.3	
8.4	27.9	15.9	K
9.5	31.6	58.9	
8.3	58.6	26.1	K
9.1	30 23.6	26.3	K
9.5	29.4	32.7	
10	42.0	0.6	
9.4	51.2	2.2	
7.5	31 3.9	12.0	K
8.9	5.6	25.0	K
10	17.4	56.8	
7.8	40.1	21.5	K
8.1	50.0	43.9	B
9.6	57.1	19.4	
8.5	32 20.4	33.1	K
9.2	21.3	36.5	K
8.3	41.2	4.1	M
9.1	33 25.7	45.0	K
9.5	35.0	31.5	
8.0	34 19.3	37.4	Sj
8.9	29.6	17.3	K
9.1	33.9	10.8	K
9.8	37.8	20.3	
8.2	45.7	20.6	K
9.5	35 3.1	48.0	
8.5	5.6	26.0	Sj
9.2	12.5	2.7	B
9.5	36 8.5	6.7	
9.7	22.0	26.7	
10	25.3	33.6	
8.8	34.0	20.1	M
8.8	35.9	12.8	K
9.3	38.1	43.3	
9.4	44.8	42.5	
7.5	37 13.3	59.6	Sj
10	22.0	36.0	
9.9	39.8	33.1	
9.2	41.2	52.4	
9.8	47.1	43.4	
9.6	38 19.4	59.8	
9.0	25.7	46.7	K
9.4	46.3	54.7	
9.5	58.1	41.3	
9.5	39 8.2	17.3	
9.5	20.2	15.1	
9.2	31.7	20.0	K
8.0	37.0	37.9	K
9.0	44.1	16.0	K
8.5	48.0	49.3	K
9.8	53.8	9.1	
9.5	40 5.6	40.8	
9.8	35.4	26.0	
9.4	41.1	43.3	K
9.8	49.9	25.7	
9.5	52.3	58.0	
9.0	53.1	47.4	K

2781—2840

m	9h m s	—3° ′	
9.3	40 57.8	53.0	
8.7	41 4.5	43.8	K
9.1	7.3	57.8	M
9.4	42 0.6	31.0	
9.0	13.0	14.2	M
9.4	24.4	1.1	
9.0	32.5	4.6	
9.5	36.1	13.7	
9.5	37.6	16.6	
9.1	43 2.9	11.1	Sj
10	6.2	49.2	
9.9	46.9	37.0	
9.0	50.1	30.5	
6.1	55.9	33.9	K
9.0	44 9.1	26.5	
9.3	24.8	13.4	
8.8	25.0	47.9	K
9.3	35.0	57.2	K
9.2	45.8	23.4	
9.2	45 25.9	15.1	Sj
9.3	47.3	4.4	
7.3	46 23.3	11.1	K
9.1	34.7	19.7	M
9.5	39.4	39.1	
10	47 3.9	43.0	
8.5	13.9	45.2	L
9.0	26.2	17.5	M
10	51.4	42.5	
10	57.7	19.1	
10	48 7.1	26.1	
9.4	13.6	30.4	
9.5	27.4	41.4	
9.6	30.4	38.3	
9.8	39.7	0.7	
8.3	47.3	7.6	K
9.8	50.8	1.1	
8.4	49 8.3	9.1	K
10	38.5	54.4	
8.6	51.3	32.2	L
9.0	50 6.2	13.5	K
9.8	36.1	12.5	
9.5	38.3	34.6	
9.4	57.4	27.7	
8.2	51 23.6	29.2	Sj
9.0	42.4	46.2	Sj
9.7	52 5.2	24.8	
9.6	55.7	22.9	
9.0	57.6	33.9	M
9.9	53 33.2	43.9	
9.1	34.9	40.1	K
8.6	36.9	34.2	Sj
9.1	57.0	9.1	K
9.4	54 0.0	57.2	
9.4	13.3	3.3	
10	18.2	46.9	
9.9	20.1	42.4	
9.6	20.4	45.4	
9.3	22.4	48.2	
9.0	32.7	14.5	K
8.5	35.9	40.5	Sj

2841—2900

m	9h—10h m s	—3° ′	
9.5	54 58.2	25.2	
10	55 30.8	35.0	
9.4	56 29.0	56.9	
9.4	40.1	56.4	K
9.1	57.2	29.3	M
9.8	57 6.4	13.2	
9.3	24.5	17.8	
9.5	31.9	16.4	
9.3	40.6	2.5	
9.8	58 47.1	13.0	
10	59 21.4	47.5	
9.4	23.9	30.5	
9.0	35.5	55.9	K
10	48.7	17.7	
10	0 41.0	22.6	
8.2	1 13.2	26.3	Sj
9.5	56.7	19.6	
9.4	2 1.9	28.1	
9.5	2.5	19.4	
8.2	9.1	13.8	K
9.4	20.1	39.2	
9.8	20.4	49.7	
9.5	49.2	19.3	
10	59.4	47.2	
8.0	3 35.3	36.6	K
9.3	4 4.4	39.6	
8.5	5.2	30.1	Sj
9.9	28.8	1.5	
9.4	41.0	58.5	
9.0	58.7	1.6	Sj
9.0	5 35.4	37.4	M
9.7	6 14.7	1.1	
7.8	35.1	24.6	Sj
9.5	58.1	18.1	
9.8	7 5.5	52.9	
10	8 9.2	59.1	
8.5	53.0	11.7	M
9.8	9 2.5	37.8	
10	9.0	0.1	
9.4	31.1	53.3	
9.0	40.5	31.0	Sj
9.8	10 1.7	58.0	
10	8.5	36.9	
9.4	15.6	16.1	
9.9	21.1	15.5	
9.5	33.5	41.6	
8.5	37.7	5.8	K
9.0	49.5	44.6	
10	55.4	40.6	
8.6	57.5	9.2	K
9.1	11 17.0	6.1	K
9.2	52.7	21.2	WC
9.9	52.9	33.6	
9.0	12 2.6	53.0	
10	7.1	18.1	
8.7	7.8	27.3	WC
9.0	21.6	59.2	
9.4	25.0	47.1	
9.8	47.5	7.5	
8.0	47.7	36.6	M

2901—2960				2961—3020				3021—3080				3081—3140				3141—3200			
10h		−3°		10h		−3°		10h − 11h		−3°		11h		−3°		11h		−3°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.0	12	52.6	52.1	M	9.4	29	47.9	46.5	WC	10	49	0.5	16.4		9.2	8	56.4	8.4		9.2	27	12.5	30.2	M
9.3	13	40.6	25.7		9.1		58.2	29.9	WC	10		8.5	19.7		9.4	9	3.9	35.5		9.6		26.6	7.4	
8.8	14	3.5	52.1	Sj	10	30	0.0	21.1		9.5	50	43.3	56.2		9.4		8.5	16.3		9.5		28.6	51.0	
8.0		15.0	7.8	K	9.4		20.4	56.1		8.0	51	32.2	54.3	Sj	9.8		9.3	17.2		6.5		34.1	33.4	Sj
9.7		36.0	10.9		8.9		20.8	8.4	Sj	9.0		35.6	2.9		7.0		13.0	10.4	K	10		48.5	17.2	
9.7	15	3.3	27.5		9.3		40.2	35.8	K	9.8		57.7	58.9		8.5		22.0	8.6	Sj	9.6		49.7	12.4	
8.2		3.7	41.7	K	9.2		42.0	17.6		8.7	52	11.4	25.3	K	9.0	10	22.8	23.4		8.5	28	27.7	57.0	K
9.0		6.0	10.1	K	9.2		48.9	27.1		8.3		12.7	36.8	K	10		37.8	50.0		9.7		29.6	13.0	
8.7		19.6	0.7	Sj	8.9	31	31.6	6.1		9.5		55.1	25.8		9.0	11	29.1	55.9	M	9.2		43.1	19.2	
9.6		33.6	30.2		9.1		35.0	57.8		9.4	53	3.0	8.6		9.8	12	9.0	46.2		9.0	29	1.6	53.7	K
6.3	16	6.2	20.6	K	10		37.4	56.0		9.9		5.7	55.0		9.2		26.4	3.3		8.3		49.1	47.3	K
9.2	17	9.0	43.4		9.5	32	7.6	7.3		9.6		32.8	59.4		10		28.8	8.1		8.0	30	10.4	42.1	Sj
9.8		26.3	33.5		10		24.5	0.3		9.5	54	1.4	14.0		9.8	13	4.7	54.1		9.5		25.2	7.3	
8.9		36.1	14.2	K	9.1	33	1.3	45.0		10		17.7	17.9		9.8		23.6	58.4		9.3	31	14.6	3.8	
10		53.4	35.9		10		2.9	56.6		10		18.0	30.0		9.9		25.1	42.3		9.8		30.1	46.4	
8.9		59.0	52.6	K	8.7		47.9	0.7		9.0		18.7	2.1	K	8.5		38.6	12.1		9.5		52.1	21.5	
9.1	18	8.0	56.7	K	8.2	34	34.4	18.9	K	9.8		20.9	8.6		9.1		47.4	35.5	K	8.5		55.0	20.0	
9.8		15.4	37.5		9.2		52.3	4.7		9.0	55	49.6	39.2		8.0		53.4	34.6	K	9.0	32	52.3	3.9	
10		20.2	3.0		9.7	35	14.0	15.5		9.9	56	32.9	16.8		10	14	26.6	1.8		9.9		57.6	59.1	
8.7		54.6	19.1	K	8.2		42.8	39.0	K	7.3	57	21.2	26.3	K	9.8		54.3	25.4		9.1	33	6.1	1.7	
7.0	19	27.3	39.1	K	9.1		58.3	7.2		9.4		21.4	35.0		10	15	16.9	8.1		9.3		14.6	14.6	
10		30.4	8.2		9.4	36	3.7	8.4		9.4		53.0	31.3		9.5		22.7	6.4		9.0		50.9	4.2	M
9.8		31.6	28.7		8.6		6.9	8.4		9.8		55.1	39.9		9.0		41.6	15.2	K	9.3	34	42.6	17.7	M
8.5		48.0	49.9	K	9.1		23.1	53.7	M	10	58	42.6	29.2		9.2		51.3	25.4		8.0	35	9.1	50.5	K
9.0	20	15.5	41.8	Sj	9.5		31.1	42.8		9.8		47.6	8.2		9.4	16	18.1	54.2		9.1	36	4.1	47.4	M
10		24.1	17.8		9.6		50.4	9.1		9.7	59	11.4	19.2		9.4		53.6	15.1		9.4		5.7	8.6	
10		41.2	26.3		9.8	37	2.0	14.4		9.7		21.3	10.3		9.5	17	0.6	15.1		8.0		40.2	59.7	K
9.5	21	8.5	8.2		9.8		20.0	3.0		9.2		33.9	18.1		9.3		4.3	39.4	M	9.6	37	11.6	35.8	
6.7		22.4	0.2	K	9.8		46.8	3.0		9.5		41.1	39.3		9.1		7.7	35.6	M	8.2		17.7	42.1	K
9.3		36.0	56.9	M	9.1	39	0.1	25.0		9.8		49.4	18.6		9.2		34.1	40.6		8.9		24.2	47.2	K
8.7		46.5	56.9	M	9.0		1.3	51.6	M	9.3		50.2	4.7		8.9		43.1	47.1	M	10	38	42.0	32.0	
9.5	22	6.1	57.6		9.3		28.3	56.9		8.8	0	9.1	51.6	M	9.5		56.8	7.0		10	39	4.5	36.4	
9.0		28.3	32.9	K	9.8	40	7.6	1.4		8.2		55.7	7.0	K	9.5	18	14.1	45.3	M	8.5		20.1	53.2	K
8.2		29.5	10.2	K	9.6		11.5	10.2		9.0	1	6.1	36.8	M	9.6		30.4	3.5		9.6	40	34.1	28.1	
9.5		36.3	28.0		10		21.3	35.5		9.8		9.0	38.5		9.2	19	6.6	10.9	M	9.8		36.7	7.2	
9.5	23	2.0	43.9		9.0		34.9	16.2	K	9.1		12.2	55.7		9.5		22.2	20.9		9.5		43.0	31.8	
9.9		5.8	47.6		9.1	41	18.8	55.5	K	9.4		15.6	26.7		9.6		35.7	51.2		9.9		49.4	2.9	
9.8	24	4.6	14.7		9.1		22.2	5.6		8.9		57.9	17.2	K	9.4		43.0	29.7		10		53.1	38.8	
8.6		5.5	0.5	L	6.7		54.9	15.7	K	8.6	3	13.6	5.2	K	9.1		53.4	1.3	M	9.6	41	26.5	40.5	
9.4		14.5	55.5		9.2	42	38.8	29.7		9.0		24.9	9.0	K	9.6	20	23.2	54.0		9.6		40.9	0.4	
9.5	25	0.3	32.5		9.9		57.4	59.2		9.9		35.9	21.5		9.9		37.0	2.5		9.8		48.5	18.2	
9.8		11.4	43.3		9.3	43	8.9	11.4	M	9.5	4	12.0	59.6		10		49.7	19.6		9.0	42	5.1	59.9	M
8.0		13.2	26.5	K	8.7		25.4	58.1	K	9.8		26.0	23.8		9.5		52.7	27.2		10		10.6	0.1	
9.8		38.3	28.9		9.0		52.2	35.5		9.5		27.1	16.4		9.3		58.6	16.4		9.6		11.8	21.9	
9.1		41.3	4.4		7.5		57.9	58.1	K	8.2		30.6	5.3	K	9.2	21	3.7	19.1		9.6		52.6	12.1	
10		56.4	11.0		8.5	44	33.5	21.2	K	8.7	5	12.4	17.5	K	9.5		34.6	52.2		9.9	43	8.1	32.2	
9.1	26	16.2	31.7	K	9.5		46.5	34.0		8.5		33.8	2.8	K	10		43.7	46.8		9.8		24.6	40.7	
9.1		34.9	11.5	K	10	45	15.7	52.1		9.0	6	6.4	58.8		7.8		51.3	38.6	K	9.5		53.6	43.3	
9.1	27	16.5	21.7	K	9.8		16.3	30.2		9.3		11.2	0.6		9.6	22	14.3	28.3		9.3	44	7.9	50.6	
7.0		29.0	8.9	Sj	8.0		27.6	8.8	K	9.9		25.4	48.3		9.5	23	5.0	36.7		9.5		31.6	4.0	
9.0	28	12.8	15.3	K	9.6		40.2	2.4		9.6		29.9	9.0		8.9		6.7	53.8	K	9.4		35.1	41.5	M
9.9		15.1	10.1		9.0	46	6.1	30.0	K	10		52.1	1.0		10		48.1	43.6		9.7		43.0	49.6	
9.5		16.9	43.7		8.8		20.5	31.9	K	10	7	10.8	39.2		9.8		51.6	53.0		9.7	45	4.5	26.7	
9.5		24.1	57.5		9.5		26.2	51.6		9.8		13.4	56.8		8.9		57.2	30.0	Sj	9.5		5.2	58.8	
9.8		25.3	36.4		8.5		40.0	16.3	K	8.8		25.3	54.2	M	9.5	24	13.3	40.6		9.5		22.9	28.7	
9.3		26.5	51.4	WC	10	47	9.7	50.0		10	8	6.9	16.0		10		48.1	47.3		9.8		58.7	48.2	
10		37.6	24.6		10		10.4	41.3		9.3		7.1	49.7		8.6	25	16.5	40.6	M	8.2	46	2.9	4.4	K
9.5		54.0	11.4		9.1		15.2	0.9		9.8		18.5	50.6		9.5	26	8.6	53.3		8.8		15.2	56.5	
9.5	29	6.6	21.3		9.9		28.1	46.2		9.1		20.1	42.4	K	9.0		28.1	59.0	K	9.3		19.1	46.8	
9.7		10.1	5.7		8.7	48	56.3	4.9	K	9.5		41.6	43.0	M	8.5		40.6	22.1	Sj	8.6		47.8	34.1	L

3201—3260					3261—3320					3321—3380					3381—3440					3441—3500				
	11h—12h		—3°			12h		—3°			12h		—3°			12h—13h		—3°			13h		—3°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.5	48	16.1	14.2	K	9.8	10	42.6	44.5		9.5	29	40.4	17.0		9.5	50	3.5	38.4		9.5	9	12.2	24.9	
9.8		24.5	39.9		7.5		42.9	8.9	K	8.8		42.2	50.9	M	9.4		49.8	58.5		9.0		29.1	6.0	K
9.9		41.2	26.5		6.8		43.5	8.4	K	9.3	30	33.5	5.3		8.5	51	25.9	9.0		8.7		29.5	57.2	
9.7		47.5	2.9		9.0	11	7.9	15.7	K	9.2		45.8	45.0		6.2	52	11.1	1.8	K	10		39.0	48.8	
9.8		50.0	18.2		9.2	12	5.6	44.3		9.0		49.4	10.2		8.6		16.4	38.8	K	9.5		48.2	18.0	
9.4	49	12.4	48.2	K	10		42.4	24.5		9.8		57.1	47.8		9.8		28.3	58.5		9.8	10	2.1	43.7	
8.7		12.8	47.9	K	7.3		50.1	42.5	K	9.5	31	8.3	20.5		9.8		30.0	31.7		9.3	12	4.4	20.8	
9.3		26.0	15.7		8.0	13	13.5	11.2	Sj	9.4		15.6	31.7		10		32.2	19.8		9.5	13	15.6	45.3	
10		36.5	57.3		9.4		24.2	11.0		6.9		16.4	34.7	K	9.4	53	10.5	33.2		9.8		28.4	2.2	
6.8		36.9	58.4	K	9.5		41.3	16.4		9.4		20.3	35.0		9.1		51.7	28.0	M	9.3		30.1	27.9	
8.7		44.2	18.8	K	7.7	14	24.4	34.7	K	9.4		40.8	35.4		9.8	54	18.9	41.8		9.7		34.5	55.6	
8.8		56.4	9.7	Sj	9.4		31.0	48.4		9.8		45.7	59.9		9.3		33.6	27.1		8.8	14	0.6	20.6	K
6.7	50	42.5	33.8	Sj	9.1	15	3.0	53.9	M	9.1		59.0	23.6	M	9.1		58.1	13.5	Sj	8.2		41.0	53.8	K
9.8		52.6	42.5		10		28.2	2.0		10	32	1.3	12.0		10	55	0.2	1.0		9.2		51.3	29.3	
9.5	51	22.1	16.0		9.3		44.8	21.9	K	9.5		50.8	15.3		8.8		2.5	51.3	K	9.3	15	0.2	1.3	
8.8		36.9	57.5	K	9.5		59.4	9.9		9.2	33	33.5	57.5	M	8.5		16.8	49.7	K	9.8		32.1	34.5	
8.3	52	20.2	8.5	K	9.2	16	15.5	55.1		8.5		58.2	12.0	K	9.0		32.2	13.8	Sj	9.5		52.4	10.7	
8.6	53	2.8	44.0	K	9.8	17	10.6	32.1		9.6	34	0.1	30.0		9.0		37.1	30.5		8.6		57.9	14.0	Sj
9.4		5.8	45.3		9.1		12.8	29.7		9.8	35	4.2	25.8		10	56	3.9	4.6		8.0	16	36.5	46.4	M
9.0		30.7	40.6	M	8.0		33.9	24.8	L	9.4		13.5	41.2		9.1		6.7	10.2	M	8.9		36.7	27.0	
9.7		33.9	47.7		9.4		37.8	14.4	M	7.5		32.8	15.0	K	9.5		36.6	13.7	M	8.5		54.9	51.3	M
9.8		47.5	56.4		9.8		48.1	38.8		9.0	36	22.6	36.8		10		44.0	11.8		7.0		56.2	32.6	M
9.4	54	0.5	21.1	M	9.5		51.0	42.1	M	9.2		53.3	32.2		9.6	57	38.8	48.3		9.5	17	18.5	16.1	
8.8		1.4	23.3		9.8	18	0.6	36.9		9.6	37	3.4	0.4		9.3		47.8	53.9		9.3		27.6	25.2	
9.5		12.9	49.2		9.7		3.7	30.2		9.5		35.2	1.3		9.0	58	0.9	25.8	M	9.5	18	27.4	56.8	
9.2		30.3	26.9		9.5		25.6	25.1		9.5		45.8	33.2		8.3		45.5	31.6	Sj	10		30.1	31.2	
10	55	56.3	27.7		9.8		30.0	44.3		10		46.2	19.8		8.5	59	0.5	33.5	Sj	9.5		32.9	56.2	
10	56	30.6	53.9		9.5		30.7	49.1		8.2		49.7	5.3	K	9.8		21.8	57.1		9.0	19	7.5	41.3	Sj
9.0		33.7	57.2	M	8.0		41.5	40.7	K	8.0		50.9	5.6	K	9.4		33.5	15.9	M	9.3		10.4	51.0	K
8.9		33.8	18.4	K	9.5	19	15.3	9.0		9.5	38	12.5	0.7		9.8	0	3.4	39.1		8.8		18.9	52.4	K
9.5	57	30.1	0.4		9.5		25.3	21.6		9.6		32.5	42.8		9.5		32.0	29.9		9.6		40.3	25.0	
9.3		35.5	13.6	M	9.4		27.1	32.1		10		35.0	43.8		8.8		47.3	55.9	M	10		53.4	51.8	
9.3		36.7	31.0	M	9.8		37.0	38.6		9.6		41.5	45.5		9.8	1	12.3	48.3		9.7		53.8	25.6	
9.8		43.0	43.8		9.6		48.9	51.5		9.5		53.6	38.4		10		22.0	11.0		9.9	20	15.8	7.2	
9.4	58	18.5	20.7		10		54.3	25.8		9.8	39	1.5	47.0		9.5		22.4	33.1		9.8		39.9	25.4	
9.4		39.3	27.9	M	9.5	20	5.1	35.9	M	9.0		3.8	13.6	Sj	9.0		29.3	49.0	M	8.0	21	11.7	42.7	Sj
9.5	59	5.7	47.8		9.4		22.9	10.5		9.2		8.4	59.1		9.0		39.8	52.9	K	10		24.7	0.1	
9.5		48.2	36.1	M	6.5		25.4	48.9	K	9.8		48.6	34.7		9.0	2	51.7	33.1		9.3		33.0	44.2	
7.2	0	46.9	28.7	K	9.1		29.4	52.5	K	10		57.1	12.2		9.4	3	2.5	23.2	K	9.6		36.7	35.7	
8.6	1	2.5	31.8	K	9.5		31.8	16.3		8.0	40	6.4	53.0	Sj	9.0		29.6	36.2		9.7		50.9	48.1	
9.7		11.6	25.0		9.4	21	13.1	38.4		9.8		49.8	56.4		8.6		48.2	8.3	K	9.3		53.7	44.8	M
8.8		28.5	5.5	K	8.3		17.5	29.6	K	9.5	41	21.3	11.4		9.4	4	12.1	13.7	M	9.1	22	32.3	29.4	K
9.7		53.4	7.9		9.6		20.9	11.6		9.5		26.5	35.7		8.7		38.5	20.1	K	9.5		36.7	27.5	
9.4	2	40.9	21.6	M	8.8		42.8	18.3	K	9.6	42	11.2	20.8		9.5		40.7	31.2		9.4		39.3	10.3	
9.4	3	6.6	52.0		9.8		56.5	47.8		9.5		22.9	57.0		9.6	5	10.2	24.9		9.5		39.9	27.6	
9.0		15.5	56.4	M	9.5	22	56.6	41.5		9.8	43	47.8	55.5		8.4		19.6	7.2	Sj	8.8	23	15.1	42.1	Sj
9.4		47.0	10.8	M	9.2	23	3.5	37.5		9.1		48.9	53.5	K	9.5		27.7	29.9		9.4		26.2	5.0	
10	4	7.5	55.8		9.0		20.6	39.0		9.5	44	4.0	41.0		8.5	6	10.2	36.1	K	9.4		35.1	21.5	
7.8		47.8	35.5	K	6.7		24.0	15.6	K	9.8		30.4	46.2		9.8		52.1	7.6		8.9		55.0	15.3	K
9.4	5	0.9	27.6		8.5	24	46.8	21.4	K	9.5		53.3	51.5		9.3	7	18.6	33.2		8.7	24	16.6	55.0	
9.8		25.6	47.9		10	25	14.2	13.7		9.1	45	30.7	20.7	K	9.0		23.6	17.3	K	9.0		51.7	43.2	M
9.8		52.0	54.6		9.4		52.1	31.4	M	9.6		57.4	50.5		9.3	8	7.1	46.7		9.7	25	7.0	5.2	
9.2	7	28.4	22.3		8.0	26	44.1	38.8	M	6.7	46	9.8	25.9	K	8.8		15.0	56.0	M	9.0		39.0	2.2	M
9.4		55.8	29.5		9.2	27	25.3	37.0		9.8	47	30.5	6.9		9.5		25.8	53.9		9.2		41.0	14.8	K
8.8		56.4	36.8	M	8.7		54.3	15.9	B	7.3		54.9	43.0	K	8.9		33.7	8.4	Sj	9.5	26	9.6	38.9	
10	8	44.3	14.2		9.9	28	1.2	0.0		9.8	48	27.3	20.5		9.8		39.0	52.3		10		32.0	52.0	
8.2		50.4	38.7	M	10		13.8	15.2		9.4		37.9	55.1		9.0		46.2	5.7	K	8.3		52.6	37.2	K
9.3	9	39.3	26.4		9.7		14.7	34.8		9.0	49	1.5	42.1	M	9.3		58.3	1.9	K	9.0	27	2.0	52.4	
9.3	10	12.8	37.2		10		50.0	39.6		8.5		20.9	56.0	K	9.3	9	2.0	51.0		9.9		28.2	26.0	
9.4		39.1	1.6		9.8	29	9.5	39.3		9.8		47.8	51.3		10		4.7	38.1		9.8		44.8	11.5	

3316: neb GC 3092

3501—3560				3561—3620				3621—3680				3681—3740				3741—3800			
13h		−3°		13h—14h		−3°		14h		−3°		14h—15h		−3°		15h		−3°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
8.7	28	1.4	38.8 M	9.4	51	42.4	9.0	9.2	17	8.4	24.8 K	9.5	43	58.9	25.7	9.5	4	19.5	7.6
9.5		15.6	36.8	9.7		45.5	0.6	8.5		14.0	21.8 Sj	8.5	44	13.3	29.6 K	9.5		23.2	24.8
10	30	24.0	52.0	9.5		51.0	43.5	9.2		28.7	45.2 K	8.7		41.9	25.2 K	9.5		32.6	5.6
9.5		51.2	10.6	9.5		52.1	30.6	9.5		29.6	47.2	9.4		45.2	41.2	8.0	5	27.1	8.5 K
9.5	31	17.5	8.2	10	52	46.2	49.3	8.0	18	25.7	3.2 Sj	9.5		46.9	10.1	9.8	6	3.4	55.6
9.5		54.6	41.7	9.5		56.5	52.9	8.4		32.9	48.0 K	9.1	46	49.4	35.6 Sj	9.2		30.6	15.5 K
9.7	32	11.7	30.0	9.5	54	10.4	36.9 B	9.7		49.7	32.1	7.7	47	24.3	2.4 K	9.0		31.9	34.8 K
9.0		39.3	28.3 M	9.0	55	18.6	5.2 Sj	8.8	19	17.7	14.7 K	9.0		43.3	46.9 B	9.1		38.8	29.3 M
9.1		44.6	37.6	9.0		52.3	9.9	9.0		30.8	46.5	9.3		49.3	10.9 M	9.7		50.6	34.4
9.5		47.5	56.3	9.2	56	5.9	38.1	9.8	20	13.7	7.1	9.5	48	6.2	20.0	9.7	7	38.0	30.3
9.6	33	38.1	42.4	9.4		19.4	32.8	8.8		27.8	44.0 M	9.0		11.7	37.5 Sj	9.8		55.4	56.5
9.5		48.7	25.5	8.5		29.0	16.8 K	9.8	21	44.8	3.1	9.6		25.3	47.3 B	10	8	32.7	35.9
9.2	34	2.1	1.9 Sj	9.8	57	12.5	47.6	9.0	22	25.4	23.0 K	9.8		31.6	8.8	9.6		34.4	58.4 K
9.2		8.2	15.9 K	9.4		29.5	46.4 M	6.8		26.8	35.6 Sj	8.7		46.4	58.6 K	9.5	9	22.2	21.2
8.7		13.9	17.3 Sj	9.5		46.5	48.5	9.1		28.7	4.3 M	9.3	49	14.8	20.2	9.7		25.6	26.5
9.1		19.1	48.0 L	9.4		49.1	59.4	7.7		57.9	25.0 Sj	4.8		36.3	45.1 Sj	9.5		39.2	19.5
9.7		39.7	2.9	10		49.2	2.2	9.1	23	21.1	9.1 K	9.4		44.7	12.7	7.3		39.7	38.7 K
9.3		54.5	43.3	9.5	58	4.5	3.3	9.7		38.1	51.6	7.6	50	8.9	26.6 K	7.3	10	5.4	57.7 K
9.2	35	12.7	24.3	9.5		32.0	48.9	9.1		46.3	3.7 K	9.7		50.4	31.9	9.8		25.1	2.1
9.8		15.3	15.6	8.0		51.9	28.4 Sj	9.6	25	47.3	40.4	9.6	51	2.4	14.4	9.4	11	29.2	19.1
9.8		56.0	38.2	9.9	59	52.1	56.0	8.8		52.0	7.3 Sj	9.4		3.9	23.2	10		35.3	45.8
7.0		59.2	31.9 S	9.3	0	42.6	6.2	9.7	26	8.7	28.7	9.4		53.4	49.1	9.1		46.8	47.9 K
9.9	36	35.6	39.3	9.0		49.6	52.4 K	9.4	28	22.9	38.4	9.6		58.7	52.7	9.0		50.9	16.8 K
10		39.1	30.5	9.3	1	44.9	38.4 M	9.7		30.3	7.5	9.3	52	57.8	36.5	9.4	12	27.9	23.1 K
9.4	37	16.7	43.7	9.0		47.7	29.8	8.5		38.1	8.8 Sj	9.6	53	11.7	5.5	9.2		27.9	16.8 K
9.8		22.6	34.5	9.8		55.5	16.2	9.1		54.1	32.0	8.8		18.0	52.7 Sj	9.5	13	51.5	42.7
9.8		35.4	53.0	9.4	3	0.6	9.5	9.3	29	18.9	50.6	8.9		36.3	31.5 Sj	9.6		51.7	24.5
9.8		38.8	45.7	9.5		15.9	10.1	7.3		23.3	39.1 B	9.1		42.7	57.0 K	9.8	14	2.1	16.8
9.1		45.6	4.6 K	9.5		26.4	32.0	6.8		35.9	15.6 Sj	9.7		44.6	2.3	9.8		5.2	31.9
8.9	39	16.4	55.2 M	9.0		44.9	40.8 K	9.9		53.4	9.0	9.7	54	6.4	23.4	9.0		18.6	33.7 K
9.8		41.0	37.6	9.0	5	1.0	34.5 Sj	9.8	30	48.3	3.1	9.8		30.6	4.9	9.5		37.8	14.0
8.9		51.9	15.7 K	9.2		15.5	0.9 K	9.4		49.1	54.6	9.5		57.7	27.3	9.8		56.7	19.3
9.2	40	15.6	16.0 K	9.8		30.1	12.4	10		49.2	40.4	8.8	55	4.0	59.5 K	9.5	15	22.3	52.7
9.5		18.9	20.3	10		41.4	12.0	9.2	31	22.8	2.0	9.4		5.6	7.1	9.5		31.7	38.4
8.0		52.6	58.6 K	8.8	6	20.8	37.7	9.4		59.0	25.9	9.4		28.7	20.4	9.1	16	11.1	16.9 K
9.1	41	22.6	26.9 M	8.7		33.7	4.2	9.8	32	30.1	0.2	9.5	56	3.0	7.3	9.0		19.1	9.3 K
9.1	43	9.5	32.9	9.8		34.7	30.1	9.4	33	6.2	43.3	9.3		11.0	1.7 K	8.7		40.3	49.5 M
9.1		11.4	42.8	9.5	7	21.1	15.7	10		16.4	52.7	9.9	57	8.6	7.7	9.6		51.4	58.2
9.1		11.7	28.7	9.5		58.5	18.5	9.5	34	16.9	16.2	9.5		22.6	54.0	9.0	18	9.0	59.4 K
9.8		38.9	27.4	8.5	8	39.0	11.7 K	9.4		21.9	26.0	9.5		31.1	17.1	9.0		9.1	50.7 K
9.4		41.7	9.6	8.7		49.6	36.3 K	9.1	35	48.9	58.1 M	9.4		43.9	59.1	9.1		29.0	58.6
9.6	44	2.9	58.7	9.8	9	14.4	49.4	8.9		56.5	19.7	9.9		43.9	51.1	9.5		44.3	59.9
9.4		28.0	48.2	8.0		29.3	39.5 K	9.1	36	40.7	41.9 K	9.7		52.5	4.6	9.6	19	26.7	17.8
8.9		51.2	6.6 K	9.3		39.3	40.2 K	8.7	37	3.7	0.8 Sj	9.5		54.6	59.7	8.5		28.6	3.2 K
9.7		59.2	14.5	9.2		41.3	21.9	9.5	38	15.6	8.8	8.8	58	5.8	48.2 K	9.8		57.2	4.5
9.8	47	6.4	52.5	8.5		48.0	35.4 K	9.7		18.2	56.9	8.9		24.0	26.2 Sj	10	20	2.6	49.0
7.8		10.9	44.6 Sj	9.8	11	34.7	49.8	8.8		20.8	47.5 Sj	8.9		43.1	12.2	10		6.9	39.5
9.8		42.1	23.1	9.5		52.5	57.9	9.8		29.5	52.9	9.8	59	39.0	35.3	9.9		21.6	40.5
8.3		53.3	39.4 L	9.4		55.6	26.1 Sj	9.5		37.3	5.6	9.5	0	30.9	58.7	8.8		25.5	15.8 K
9.4	48	2.2	51.3	9.1	12	38.2	35.1 K	9.5		38.2	17.8	7.5		32.0	11.8 K	9.0		46.9	0.3 K
8.8		8.0	55.5 M	9.8	13	41.6	35.0	9.9		53.1	1.2	10		59.1	45.9	9.5	21	13.8	25.4
7.5		34.6	54.3 L	9.8		43.2	20.5	9.5		53.4	44.1	9.5	1	22.2	13.4	9.4	22	59.9	27.0
9.0		37.3	31.0 K	8.3		45.5	59.8 K	8.0	39	38.4	37.3 Sj	8.0		23.0	27.1 Sj	8.3	23	30.7	51.4 K
9.8	49	17.0	11.9	9.6	14	24.0	58.8	9.0	40	4.7	22.3 Sj	9.5		54.9	13.4	9.3		49.6	37.8
9.5		46.3	30.4	9.2		41.0	30.8	8.6	41	35.0	53.9 Sj	9.0		59.0	37.9	9.7	24	2.6	32.4
9.5	50	8.7	57.0	9.5		44.2	21.8	9.5		50.7	24.5	8.0	2	2.7	17.2 K	9.6	25	37.6	22.2
9.8		15.0	46.4	8.8		59.9	3.7 M	9.3	42	12.1	24.3	9.8		40.7	16.6	8.3	26	38.9	52.2 K
8.7		17.5	6.2 Sj	9.6	15	14.8	3.0	9.4		12.8	40.5	9.3		43.3	30.1 K	9.5		41.0	34.5
9.1		25.7	57.3 M	8.8		24.9	45.7 K	9.2		42.7	16.1 Sj	9.6	3	7.1	47.9	9.5		44.0	2.1
8.2		26.9	40.5 Sj	8.8	16	37.9	14.6 K	7.9	43	18.4	31.8 Sj	8.4		31.3	0.8 Sj	8.5	28	7.5	0.4 K

3648: 22:74 38′44″7 B_4, Ep. 1872.90

3801—3860					3861—3920					3921—3980					3981—4040					4041—4100				
	15h		−3°			15h—16h		−3°			16h		−3°			16h		−3°			16h—17h		−3°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.0	28	58.0	34.8		9.2	54	37.8	7.6	M	9.0	13	7.7	34.6	M	9.5	35	19.8	22.7		9.9	52	44.6	34.2	
9.0		58.1	59.7	M	9.8		49.1	3.1		9.3		16.2	8.1		7.3		33.9	52.1	Sj	8.8		49.9	59.1	M
9.8		59.1	17.8		9.7		53.5	17.7		9.5		16.9	16.4		9.5	36	17.0	46.5		9.5		51.9	52.8	
9.5	29	31.2	52.7		8.0	55	5.3	15.1	K	9.0		30.2	30.7	M	9.1		24.0	8.8		9.5		58.4	3.8	
9.5	30	11.4	57.8		9.6		10.7	13.7		9.5		49.4	18.0		9.8		38.1	5.0		9.2	53	21.6	1.6	
7.1		11.4	7.4	K	9.3	56	9.9	48.5		8.9	14	23.8	8.4	M	9.5		54.9	49.2		9.2		30.8	59.9	
9.7		12.2	36.5		9.1		33.4	1.1		9.5		35.3	50.9		9.3	37	19.0	28.8		9.4		36.0	57.2	
9.2		41.6	29.1	K	9.8		35.7	29.2		9.4		49.5	10.7		8.4		45.9	46.3	K	8.2	54	3.1	33.0	L
9.0		41.7	34.9	K	9.5	57	5.9	45.0		8.0		55.5	54.0	K	9.5	38	25.0	48.7		9.2		4.3	49.7	M
9.3	31	26.6	28.0	K	6.8		32.7	7.4	K	8.9		57.9	52.1	K	9.6		27.8	13.4		8.9	55	33.9	42.8	M
9.8		31.3	31.0		9.8		55.0	19.8		9.5	15	0.3	9.8		9.1		28.1	6.8	Sj	9.7		49.2	52.6	
9.7	32	31.2	2.2		9.3	58	15.3	22.5		9.5		18.7	12.3		9.4		44.5	42.9		9.4	56	38.4	47.8	
9.4		50.3	53.1		9.6	59	3.0	2.2		9.6	16	3.2	14.4		9.3	39	36.5	26.9		9.3	57	1.1	26.7	
9.5		52.0	45.3		9.8		20.7	15.0		9.5		35.6	44.4		9.3	40	29.8	0.6		9.2		46.0	55.6	
9.0	33	4.2	0.5	K	7.5		25.0	28.9	K	9.8		42.4	16.6		9.3		41.4	38.0		9.4		55.2	37.1	
9.5		42.9	31.9		8.0		30.4	53.9	K	9.6	17	7.6	29.9		9.0		41.9	15.2	K	9.5	58	14.5	13.7	
9.9		49.8	53.1		9.8	0	11.4	47.1		8.7		13.1	7.2	Sj	9.3		42.7	43.1	M	9.7		18.5	16.3	
9.1	35	49.6	29.1	K	9.8		17.8	11.7		9.5		39.9	54.3		9.3	41	2.0	28.9		9.8		18.9	47.8	
9.4	36	2.4	59.4		8.8		58.8	39.5		7.7		56.6	31.8	K	9.2		4.0	52.7		9.8		30.4	50.7	
8.0		51.1	22.4	L	9.6	1	28.4	47.5		8.9	18	28.2	11.2		9.6		4.8	24.1		9.0		50.5	8.5	
9.5	37	18.9	1.8		9.4		51.4	45.3		9.5		51.4	28.3		9.0		7.6	57.8	M	9.8	59	46.6	23.5	
9.5		52.8	17.3		8.7	2	1.2	9.8	K	9.1	19	11.0	27.5		8.3		11.9	21.1	K	9.2	1	3.2	6.7	
8.3	38	37.3	28.9	K	9.2		8.6	12.2		8.8		46.9	12.7		9.3		15.4	16.2	M	6.7		16.6	40.9	K
8.0		54.2	36.3	B	6.1		15.1	4.7	K	9.5		59.3	58.8		9.3	42	21.5	0.3	Sj	9.4		31.9	59.2	B
8.8	39	3.9	22.2	K	9.7		34.3	7.9		9.9	20	30.1	4.9		9.7		26.0	52.1		9.8		35.3	28.9	
9.2		37.4	21.1	K	9.0		44.3	15.9		9.6		31.8	15.4		9.7		39.8	6.6		9.7	2	3.9	0.6	
9.4		40.3	8.4		9.3		50.8	24.2		9.4		38.3	55.3		8.6		43.7	31.3	K	9.8	3	24.2	40.5	
9.8	40	46.9	4.8		8.2	3	36.8	36.4	K	9.7	21	23.8	41.5		8.0		53.2	22.5	K	9.4		24.2	58.3	
6.0	41	21.9	22.1	Sj	9.8		45.4	5.0		9.5		54.2	37.6		8.3	43	3.5	5.6	K	9.6		43.1	19.3	
9.4		40.6	11.7		8.7	5	2.2	8.9		9.4	22	12.8	46.1		9.5		10.4	58.8		9.8		50.9	8.6	
9.5		45.2	12.6		6.5		18.9	50.8	K	8.8	23	6.4	45.7		8.2		32.1	0.3	Sj	9.7	4	7.2	35.6	
9.0		55.2	2.5		9.5		20.4	46.1		9.0		6.6	39.8		9.8		38.8	33.1		7.8		12.1	9.8	Sj
7.2	42	21.8	28.3	K	9.4		29.3	34.9		8.0		8.3	21.7	L	9.8		43.2	25.1		9.5		46.0	9.1	
9.7		57.9	37.2		9.7		32.3	34.0		9.5		12.9	44.2		8.0	44	42.4	43.0	Sj	8.2	5	6.4	52.5	K
9.5	43	33.4	44.1		8.8		47.4	13.8		9.1	24	42.8	52.4		9.3		57.9	20.0		9.5		55.3	43.1	
8.0	44	39.6	53.1	Sj	7.3		48.8	40.7	K	9.5		43.9	32.7		9.5	45	15.5	33.8		9.5		57.9	55.8	
9.2	46	26.9	32.5		9.4	6	11.9	29.0		9.0	25	7.7	14.7		9.5		16.5	59.0		9.0	6	17.4	43.4	
9.4		27.8	47.3		9.4		12.1	47.6		9.4		19.3	57.4		9.4		36.3	26.2		9.8		30.0	3.3	
9.5		50.9	19.3		8.5		12.6	49.0	K	9.5		37.3	30.1		9.5		44.3	21.3		7.2		44.3	59.1	Sj
9.5	47	7.6	27.2		9.3		12.8	12.4		9.4		41.0	36.0		8.3		54.3	16.6	Sj	9.5		49.9	50.9	
9.3		19.4	30.5		8.0		29.3	47.0	K	7.0		45.8	57.2	Sj	9.5	46	7.3	19.7		9.5	7	40.9	34.3	
9.3		19.6	35.6		8.5		41.2	5.8	L	8.8		52.5	13.9	Sj	9.5		25.7	32.7		9.4		58.8	6.5	
9.2		20.2	59.9		3		44.8	18.8	K	9.8		58.4	4.5		7.3		48.0	55.3	K	9.0	8	41.3	26.6	
9.6		24.4	6.0		9.5	7	14.9	49.7		8.0	26	21.5	29.1	L	9.4	47	10.0	58.8		9.5		57.3	56.8	
9.8		33.8	34.0		9.3		36.9	31.1		9.1		22.4	18.4		9.6		32.7	1.2		9.1	9	20.7	28.1	
8.5		53.0	58.8	Sj	9.2		42.9	28.6		9.3		25.6	18.1		9.1		57.1	20.7		10	10	20.2	15.3	
8.8	49	19.5	50.5	K	9.5	8	27.2	35.6		8.7		45.7	42.4	M	9.5	48	3.8	29.1		7.3	12	11.9	53.5	Sj
9.4	50	30.6	5.8		9.2	9	7.7	1.1	M	9.1	27	5.1	53.9		8.8		47.0	23.6	Sj	9.5		33.7	8.0	
9.3		37.5	7.2		9.6		14.5	34.1		9.5	28	36.2	47.1		9.4		51.2	56.1		9.6	13	10.1	7.1	
9.4		50.6	58.5		6.0		17.6	35.3	K	9.5	29	0.7	29.0		9.1	49	23.8	35.2		9.2		11.9	54.2	
9.0	51	5.9	3.5	M	9.5		42.4	24.7		9.0		18.3	20.6	Sj	neb		29.5	52.0		8.6	14	34.8	27.7	
9.8	52	22.9	37.5		9.3		44.8	44.8		9.5	30	7.9	31.1		10		49.9	2.0		8.4	15	7.7	35.3	Sj
8.8		28.7	25.2	M	9.5		47.9	52.0		8.8		20.1	24.8		9.6		51.4	12.5		9.4		11.6	2.3	
9.8		28.9	41.0		9.3	10	6.8	29.5		8.0	32	5.3	19.8	Sj	9.8	50	22.4	47.4		9.3	16	37.0	8.2	
9.4		49.8	57.7		8.2		7.6	40.5	Sj	9.8		13.6	55.5		8.9		38.5	0.4		9.2		51.1	45.6	
9.8		52.5	53.1		9.0		9.4	53.2		9.5		34.6	31.7		9.2		55.8	26.7		9.3	17	57.8	9.0	
8.6	53	6.2	28.3	K	10		27.0	55.8		9.1	33	25.5	56.7		9.4	51	39.4	40.0		8.5	18	5.6	14.6	Sj
9.3		40.2	31.4		9.4		39.7	11.1		8.0		44.0	55.5	Sj	9.2		52.2	3.5		9.3		24.0	40.9	
7.0	54	5.3	21.3	Sj	9.3	11	27.7	5.8		9.4	34	42.6	28.3		9.7	52	1.6	29.8		9.8		54.4	19.9	
9.8		14.4	6.5		9.0	12	29.8	37.5		9.5		44.5	32.9		7.3		10.2	59.4	Sj	9.3		59.1	25.3	

4101—4160				4161—4220				4221—4280				4281—4340				4341—4400			
17h		−3°		17h		−3°		17h—18h		−3°		18h		−3°		18h		−3°	
m	s	′		m	s	′		m	s	′		m	s	′		m	s	′	
19	6.8	20.4		9.8	36	22.9	5.9	9.0	53	23.5	30.9	K	9.8	17	24.6	57.4		9.5	32	25.9	3.3	
	8.1	57.0		9.7		36.6	3.5	9.6		48.8	5.6		8.3		46.2	25.4	M	9.4		28.7	54.9	
	17.8	9.8		9.8		37.5	57.6	9.1	54	24.9	48.4	K	8.7		55.2	34.5	K	9.5		39.6	14.4	
	21.0	3.7		9.2		48.1	47.2	Sj 9.8		29.5	7.1		9.0	18	11.6	42.7	M	9.7		45.4	57.0	
20	7.9	0.1	Sj	9.2	37	19.0	46.9	6.5		52.9	9.1	Sj	9.5	19	5.4	14.4		9.7		45.6	32.8	
	49.8	26.5		9.8		30.6	57.0	9.8	55	7.0	48.8		9.8		26.8	53.1		9.4	33	2.2	7.3	
	59.9	41.3		9.2		40.0	2.4	9.1		8.7	24.9		9.1		55.2	29.0		8.7		10.1	8.8	K
21	16.7	4.3		7.6		57.4	26.5	L 10		23.5	6.6		7.5	20	47.6	56.7	Sj	9.7		11.1	32.8	
	20.6	56.1		9.5	38	24.3	47.7	9.2		32.0	57.2		9.1	21	28.3	42.8		9.5		17.6	48.7	
	23.2	6.9		9.2		29.6	25.7	9.5		43.8	7.3		9.3		47.1	27.3		9.2		33.1	30.4	
	36.5	43.0		8.2		56.5	51.0	Sj 8.5		45.9	43.3	K	9.8		59.4	45.2		8.3		35.1	56.8	Sj
22	27.6	12.8		8.4	39	2.2	59.7	Sj 8.9	56	15.2	34.8	Sj	9.5	22	26.3	38.9		9.0		38.1	15.2	Sj
	40.4	11.0		9.6		8.8	6.9	8.8	57	26.5	1.5	Sj	9.8		54.4	48.5		9.1		42.1	54.9	M
	57.6	36.3		9.4		9.8	12.7	9.1		42.9	23.5		9.8	23	4.8	33.1		7.2		57.3	14.7	Sj
23	5.2	9.8		9.8		14.4	1.6	9.3	58	0.0	39.9		9.3		30.3	57.6		9.4	34	3.9	12.7	
	11.0	47.9	K	9.1		54.3	19.2	8.9		52.6	2.7	K	9.0		54.3	58.8	M	9.8		30.7	51.1	
	47.3	28.5		8.5	40	5.2	35.1	K 7.0	59	19.0	14.7	Sj	9.6	24	0.3	59.8		9.4		43.1	55.6	
	47.7	33.9		9.3		58.5	9.6	9.6	0	28.0	21.3		9.3		15.8	45.8		9.5		51.6	59.8	
	50.0	41.2		9.3	41	36.8	8.2	9.4		34.6	30.9		8.8		22.2	41.9	M	9.8	35	20.5	4.6	
	56.0	26.4	K	9.4	42	3.3	29.8	9.2		57.6	59.5		9.8		29.2	58.3		8.5		41.5	19.6	L
24	26.7	17.8		9.1		27.1	10.1	9.8	1	42.7	45.0		9.2		38.6	6.3		9.5		47.0	46.5	
	33.7	59.5		9.2		42.9	32.2	8.3		43.7	0.0	K	9.5		49.2	31.0	M	9.6		48.7	40.2	
25	6.0	40.6		9.4	43	20.4	29.6	9.5	2	5.4	21.0		9.3		57.7	45.2		9.5	36	2.0	47.6	
	7.9	10.1		9.8		42.0	31.6	8.8		12.1	54.8	K	9.5	25	6.3	47.6		9.3		27.0	5.7	
	21.0	14.9	Sj	9.8	44	9.6	14.6	9.3		16.6	3.2		9.1	26	49.7	18.4	K	9.3		33.5	21.6	
	48.5	37.6		9.2		11.3	27.1	9.8		41.5	28.5		9.8		51.8	35.5		9.5		42.0	51.1	
	50.1	19.7	Sj	9.1		14.9	26.7	9.3		59.3	40.3		9.8		59.6	20.2		8.5		54.4	17.6	K
27	2.1	44.3		9.7		26.3	24.1	9.5	3	29.5	22.0		9.2	27	6.5	50.7		8.8		56.7	25.4	K
	29.2	33.6		8.3		51.5	57.7	K 9.3		33.0	24.3		8.8		11.1	2.6	M	8.5	37	11.5	45.1	Sj
	34.6	7.0		9.5		52.4	31.4	9.4		52.6	54.6		9.8		11.2	24.3		9.4		12.5	41.6	
28	24.8	8.3		9.1		55.6	19.4	9.3	4	52.4	24.4		9.5		20.7	24.7		9.5		14.9	5.1	
	31.5	35.3	K	8.0		59.5	8.7	K 8.1		59.0	30.8	K	9.2		23.2	28.7		9.8		42.0	6.5	
	43.2	28.3		7.3	45	10.0	31.4	K 9.8	5	40.5	19.6		9.8		29.1	14.2		8.0		50.0	22.5	Sj
	44.7	15.8		8.8		13.2	34.8	K 8.2		41.8	25.9	M	9.1	28	35.8	30.4		9.6	38	6.7	28.1	
29	15.4	15.1	Sj	9.4		16.5	2.6	8.7		58.9	1.5	K	9.8		48.7	15.9		9.5		12.3	12.2	
	18.2	15.8		9.2		29.7	42.2	9.0	6	21.1	40.8	Sj	8.5		56.1	11.5	Sj	9.4		56.0	3.4	
	22.6	31.4		9.6		44.8	8.6	7.5	8	5.0	23.7	S	9.1	29	7.3	42.5	M	9.8		58.4	12.1	
	31.7	33.6		9.0		54.0	52.6	Sj 9.6		10.6	16.3		9.5		15.1	16.8		8.6	39	19.5	56.2	K
	50.6	41.0		8.5	46	19.2	5.1	K 6.6		20.2	39.1	K	8.7		20.0	37.1	M	9.4		45.0	55.3	
	52.7	23.6		7.2		52.9	25.5	K 9.3		32.1	41.5		9.2		23.3	54.5		8.5		50.0	47.1	Sj
	54.8	38.1		9.5	47	11.0	51.0	9.5		56.9	41.3		9.0		45.7	0.4	K	9.2	40	50.3	25.4	
	58.8	9.5		10		49.0	1.8	9.4	9	2.8	36.1		9.1		49.6	0.4	K	8.0	41	1.0	15.8	Sj
30	9.9	40.5	K	9.6	48	6.9	30.7	6.5		16.8	2.4	Sj	9.5		50.9	11.5		9.1		18.2	11.3	K
	37.3	47.6		9.6		12.8	10.3	8.9	10	52.8	30.9	M	9.6		52.7	48.6		9.4		47.9	7.0	
	38.7	1.8		9.8		33.4	28.0	9.1	11	8.3	57.9		7.2		54.2	2.2	Sj	9.1		49.2	11.8	K
	55.4	2.8		9.5	49	0.0	45.3	9.8		15.9	34.2		9.4	30	4.1	16.0		9.5		56.0	33.7	
31	55.2	32.3		9.5		18.5	26.7	8.0		24.4	13.2	K	8.9		12.6	51.8	M	9.3	42	24.9	12.5	
32	20.6	31.6		9.5		27.4	25.3	9.5		43.0	22.4		9.9		16.6	15.0		6.8		30.5	46.9	Sj
	26.0	59.6		9.5	50	20.9	25.9	9.3	13	2.3	37.6		9.6		25.8	2.5		9.7	43	1.8	8.2	
	32.5	27.0	Sj	9.3		24.2	14.6	9.5		27.3	58.4		9.9		33.2	7.9		7.3		28.7	25.4	Sj
	35.1	25.2		9.3		52.5	48.8	9.2		34.6	21.4		6.5		46.7	18.8	L	9.8		33.1	40.6	
	52.5	52.2		8.8	51	15.9	29.6	K 8.0		46.6	9.8	L	8.3		48.1	45.5	K	6.5		45.1	28.7	K
33	1.6	24.2	B	8.8		44.3	42.4	8.0		58.8	56.1	Sj	9.1		53.2	23.8		9.2		56.1	37.5	
34	12.6	13.7		10		45.5	36.1	9.5	15	20.4	56.5		9.0		59.7	48.6	K	9.4	44	1.0	57.7	
	19.3	45.7	Sj	9.4	52	7.8	12.7	9.4		29.8	34.4		9.5	31	2.7	55.7		9.0		27.1	41.6	Sj
	55.4	59.9		9.0		18.5	47.7	9.5		41.3	14.8		9.8		34.2	7.9		10		29.5	51.7	
	58.4	44.2	M	5.2		49.9	40.4	K 6.5	16	25.8	39.1	Sj	8.8		41.1	16.7	K	7.2		46.8	53.8	K
	59.3	53.0		9.7		55.2	8.8	9.5		44.3	55.5		8.8	32	8.7	14.9	K	9.2		52.6	47.8	
36	1.2	8.5	Sj	8.0		56.0	57.8	K 8.3		59.7	7.6	M	9.5		19.1	24.7		9.8	45	35.5	3.4	
	7.3	50.5	Sj	9.1	53	21.5	38.6	9.6	17	23.6	18.2		9.8		24.6	5.1		9.4		45.2	46.9	

4288: 47°77 57′5″8 B_3, Ep. 1872.98 4397: roth

4401—4460					4461—4520					4521—4580					4581—4640					4641—4700				
	18h		—3°			18h—19h		—3°			19h		—3°			19h		—3°			19h		—3°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.4	45	51.0	43.3	K	9.4	55	24.2	33.0		9.5	6	28.9	52.7		9.8	16	30.4	20.0		9.0	28	9.7	55.0	
9.5	46	0.6	52.8		9.5		24.9	29.9		7.8		39.8	44.4	Sj	10		38.5	30.9		8.5		16.6	22.0	K
9.5		22.1	41.9		9.2		29.1	43.0		9.4		43.3	8.1		9.7		41.3	22.0		9.5		21.4	1.0	
9.0		25.8	52.1	M	9.4		29.9	51.9	M	9.5		51.7	19.3		9.3		44.7	48.5		9.4		32.9	49.4	
9.3		26.8	54.6		9.0		32.1	40.4	M	9.8	7	3.9	57.5		9.2		45.1	7.1	M	8.2		37.6	7.3	K
9.7		32.8	37.8		7.7		43.4	0.0	Sj	8.7		12.5	38.1	K	9.5	17	38.7	25.7		9.5		47.5	54.8	
9.2		48.4	32.1		9.8	56	7.1	52.3		9.8		16.1	1.9		8.9		42.8	43.2		9.6		59.3	28.0	
9.7	47	3.2	46.0		9.3		10.1	31.0		9.2		19.4	32.7		9.1		44.8	23.8		9.3	29	14.5	10.4	
9.2		4.3	48.4	Sj	9.5		20.2	27.3		9.4		22.8	50.7		9.5	18	12.0	15.7		8.0		34.9	47.5	M
9.5		10.8	53.1		9.3		50.5	21.6		8.5		29.1	34.4	K	9.1		14.5	36.6		9.0		41.8	37.2	Sj
9.5		28.1	50.6		9.8		52.6	48.1		9.4		32.2	15.7		9.5		37.8	43.2		9.0		42.6	35.5	
9.4		35.1	44.6		9.6	57	0.6	43.2		8.5		34.9	35.8	K	9.4		41.9	53.3		9.4		45.0	16.8	
8.7		54.5	0.4	M	9.5		3.6	46.9		9.4		38.6	28.0		9.5		57.9	43.8		9.5		55.5	6.9	
8.9	48	11.5	8.3	M	9.5		57.3	48.7		9.3		44.5	53.8		9.2	19	11.7	2.5		9.4		58.2	36.8	
9.5		17.1	51.8		9.0		59.5	4.3		7.8		50.3	21.6	K	9.8		14.8	36.6		9.5		58.7	34.6	
9.3		20.2	0.5		8.2	58	7.9	51.2	K	8.6	8	1.7	17.3	K	9.2		21.3	22.0		8.5	30	2.7	0.8	K
9.1		30.0	20.9		9.7		23.4	10.9		9.1		4.4	36.4	M	9.5		47.7	12.5		9.5		28.5	8.0	M
9.3		51.7	25.2		9.4		29.8	26.6		9.0		6.5	7.7	M	8.3	20	33.9	20.3	Sj	9.0		37.2	31.8	M
9.2	49	1.5	18.4		9.6		34.6	3.8		9.4		16.9	29.4		9.5	21	3.6	54.8		9.5		45.4	51.8	
9.5		15.4	24.6		9.5		43.5	17.5		9.4		23.0	53.8		9.8		30.6	20.9		9.8		48.0	54.7	
9.3		18.1	44.2		9.5		53.2	0.3		9.0		35.2	32.7	Sj	9.6		37.9	56.7		9.8		55.1	10.6	
9.3		25.9	23.0		9.7	59	7.3	45.0		9.8		42.1	23.0		9.5		48.8	33.7		9.3		56.1	34.4	
9.2		36.7	34.8		9.7		28.9	48.8		9.5		46.6	33.5		8.8		49.0	6.0	R	9.1		58.4	35.7	
9.7		49.8	23.1		9.1		53.0	8.4		9.4		49.6	25.9		9.3	22	3.2	0.9		9.5	31	9.2	45.1	
9.0		50.5	13.3		8.2	0	2.0	2.6	M	9.5		53.4	44.8		9.2		5.4	42.4		8.7		12.0	52.6	K
9.3	50	0.1	48.7		8.5		16.2	16.9	M	9.1	9	25.7	15.0	M	8.8		6.2	0.8	M	9.8		12.9	57.7	
9.7		8.1	54.1		9.8		16.8	12.2		10		29.9	52.8		9.5		30.8	10.0		9.3		16.2	27.6	
9.8		13.6	43.3		9.7		31.2	24.9		8.7		33.8	38.0	Sj	9.5		32.3	16.4		9.8		16.4	52.6	
9.5		21.9	16.7		8.5		32.9	45.4	Sj	9.2		50.6	33.9	K	9.0		37.5	3.0		9.5		21.0	46.4	
9.4		27.3	16.9		9.3		55.0	11.5		9.4	10	18.0	40.8		9.1		41.4	45.1		8.5		36.8	30.1	L
9.7		43.1	19.9		9.8	1	5.8	40.7		9.5		18.3	12.0		8.2		41.5	28.4	Sj	9.5		45.7	25.0	
9.4		55.0	18.3		9.1		16.3	22.6		9.5		20.7	9.4		5.7	23	5.5	4.8	Sj	9.4		58.6	11.1	M
9.0	51	2.5	7.5		9.8		16.7	7.8		9.0		22.5	43.9	Sj	9.6		20.4	49.1		9.3	32	2.7	24.9	M
9.5		16.1	35.4		8.7		21.1	34.0	K	9.9		26.5	40.1		9.5		24.9	49.4		8.7		22.2	25.7	Sj
9.0		19.2	58.1	M	9.8		39.1	39.8		9.5	11	6.8	21.5		9.9		31.6	50.1		9.5		33.9	51.2	
9.8		31.4	19.6		9.4		50.9	45.2		9.2		7.8	23.6	M	9.5		34.5	2.0		9.6		43.8	2.2	
9.3		46.5	13.2		9.6		53.9	37.0		9.5		8.7	16.8		9.2		48.6	36.4		9.3		49.5	41.1	Sj
9.5		55.9	30.5		9.6		57.2	8.3		9.5		15.4	43.0		9.0	24	6.0	6.4	R	9.7	33	7.5	0.4	
7.4	52	2.2	1.6	K	8.0	2	10.8	54.3	Sj	8.8	12	6.4	36.3	Sj	9.8		15.9	13.5		9.5		13.0	41.8	
9.5		19.4	25.4		9.8		20.2	14.7		9.8		9.3	5.0		9.2		28.9	46.7		8.5		25.1	12.5	K
9.0		24.4	29.8	M	9.6		34.6	30.4		9.5		21.4	49.5		9.6		34.8	25.3		9.3		32.2	24.6	
9.5		33.1	56.8		9.7		36.4	26.1		9.5		26.0	18.1	Sj	9.6		45.5	28.7		9.1		48.4	55.9	
9.7		41.1	45.5		9.5	3	7.1	3.5		9.2		31.1	1.0		9.5		54.2	35.0		9.4	34	18.9	31.8	
9.5		55.7	29.2		9.5		23.7	5.0		9.4		34.4	18.4	M	10	25	36.7	30.5		9.3		27.3	24.5	
9.7	53	3.5	19.0		8.0	4	3.8	17.7	K	9.2		35.1	1.9	R	9.4		44.1	41.2		9.2		33.3	24.5	M
9.0		32.1	43.0		9.0		10.2	59.9	M	9.8		59.7	36.4		9.8		51.4	0.2		9.5		51.1	44.2	
9.3		41.1	32.9		9.8		37.3	11.5		9.4	13	2.9	43.3		8.5		59.7	55.7	M	9.8	35	16.3	30.1	
9.5		50.5	18.1		9.3		44.5	55.9	M	9.8		30.1	49.2		9.1	26	5.5	13.9	M	9.8		47.2	43.0	
9.0		55.1	41.2		9.5		47.7	14.4		9.3	14	3.9	40.6		9.5		30.5	30.0		9.4		49.2	40.0	
8.5	54	12.7	34.4	Sj	9.5	5	14.2	6.8		9.8		18.4	24.9		8.5		36.3	35.9	Sj	9.4	36	3.7	29.6	
9.8		29.7	3.7		9.1		17.6	47.7		9.5		46.0	22.1		9.5		38.9	52.8		9.8		18.7	39.7	
9.5		41.8	6.2		9.1		20.2	26.5	M	8.7		47.7	54.1	K	9.5		40.4	53.7		9.6		22.3	37.2	
9.7		46.7	25.5		8.5		21.3	47.0	Sj	7.0		55.9	59.1	K	9.2		50.8	28.4		9.5		41.3	33.8	
8.8		52.5	3.0	M	9.0		23.1	39.4	K	9.7	15	3.3	6.9		9.8	27	17.6	1.8		9.4	37	2.2	43.3	
9.7	55	3.6	35.5		9.5		25.6	29.3		10		3.3	36.9		9.2		22.5	1.8	M	8.5		12.4	26.9	K
9.7		4.5	38.9		8.5		36.4	41.2	K	9.8		6.4	37.0		9.7		25.9	2.7		7.7		34.1	22.0	B
9.2		6.9	33.3		9.4		46.8	0.4		8.8		14.4	9.1	M	9.5		36.8	29.7		9.5		42.0	8.8	
9.1		7.7	57.1		9.5		50.6	49.1		10		37.9	47.8		9.5		38.2	14.8		8.8		51.2	29.9	
9.1		14.5	15.1		9.8		54.3	28.9		9.5		52.5	19.4		9.4		56.7	57.1		9.1	38	6.6	33.1	
5.7		16.1	54.5	Sj	9.8	6	23.3	22.8		9.6	16	14.6	55.0		9.0	28	8.9	51.5	M	9.5		13.3	57.4	

4701—4760				4761—4820				4821—4880				4881—4940				4941—5000			
19h		—3°		19h—20h		—3°		20h		—3°		20h		—3°		20h		—3°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
6.7	38	17.5	13.3 B	10	51	18.2	24.9	9.5	7	7.7	7.9	9.2	17	15.9	21.6 Sj	9.3	25	51.0	48.5
9.0		30.9	38.6 K	9.2		20.3	27.9	9.6		11.8	28.9	8.5		35.4	53.4 Sj	10		52.4	54.6
9.5	39	7.9	35.6	9.5	52	19.1	25.0	9.6		12.5	35.7	9.5		38.5	59.6	9.8	26	16.4	23.7
9.1		25.9	29.5 M	9.6		45.2	39.7	8.8		34.4	56.4 K	9.5		40.2	4.8	9.3		23.0	58.0
9.5		29.4	8.2	9.6	53	18.2	53.3	7.0		35.1	56.2 K	8.9		57.7	3.9 Sj	8.8		39.0	52.8 K
8.5		50.0	48.3 Sj	9.3		20.6	7.2	10		36.9	9.3	9.8		58.9	8.9	8.7		40.9	33.6 M
10		54.0	54.7	9.7		52.2	49.8	9.8		37.6	16.9	9.4	18	0.8	44.4	9.8		53.0	53.3
9.1	40	16.7	56.5	9.5	54	5.6	34.8	8.5		49.0	10.1 M	6.3		7.7	15.5 M	9.0		57.7	54.3 K
9.5		31.1	7.6	9.3		12.7	54.9	9.6		52.6	16.5	9.5		20.4	47.3	8.7	27	5.2	59.9 Sj
9.5		37.5	0.7	9.2	55	0.8	47.8	9.0	8	0.8	25.4	8.5		26.9	54.8 K	9.1		11.8	11.2 M
9.1		38.4	39.2 Sj	7.3		1.8	44.0 Sj	9.5		2.5	57.5	9.3		35.2	26.2	9.5		14.3	1.3
9.5		47.7	57.7	9.3		26.9	55.8	9.6		7.3	11.7	9.0		40.0	58.2 K	9.8		32.4	41.9
10		49.8	5.8	8.8	56	3.3	46.7 Sj	9.3		12.8	25.0	9.5		44.5	56.2	8.9		52.9	42.0 M
9.6	41	4.4	50.8	9.1		5.3	50.5	9.0		25.7	8.6 K	9.2		48.2	9.0 M	9.7	28	1.9	46.0
9.3		19.5	41.6	9.3		36.2	39.8	9.5		40.4	53.0	9.4		50.3	27.7	8.4		6.2	48.7 Sj
9.5		20.1	15.1	9.1		45.7	12.7	9.5		57.9	15.5	9.3	19	15.4	44.4 M	9.5		20.0	53.0
9.8		21.7	38.0	9.2	57	15.5	34.1 M	9.5	9	10.0	12.6	9.5		16.2	55.8	9.3		30.8	40.8
9.3		24.0	41.1	9.1		15.7	3.6	7.2		14.4	55.6 K	9.3		19.9	21.6	9.2		49.6	28.4
9.8	42	0.6	15.9	9.5		59.3	32.5	9.5		32.0	1.8 M	9.3		23.9	43.1 M	9.4		55.9	44.3
9.0		5.7	56.2	9.1	58	5.6	8.5 M	8.8		40.3	36.4 Sj	8.7		30.7	25.8 Sj	9.6		56.7	35.4
10		6.5	33.4	9.0		13.3	46.6 K	8.5	10	42.2	16.4 K	8.4		54.1	51.6 K	5.4	29	10.6	2.4 K
9.5		12.9	21.4	9.6		28.4	28.9	9.1		49.1	12.0 M	9.8		59.6	36.6	9.5		15.6	34.1
9.5		36.5	48.6	9.1		29.2	32.4 M	9.5		57.8	15.5	9.4	20	21.0	46.2	9.8		25.4	35.8
9.8		40.7	36.8	9.3		31.7	11.6	9.3	11	4.2	10.3	9.2		30.2	3.9	9.8		48.0	37.7
9.6		46.0	18.3	9.7	59	20.0	38.0	9.6		24.7	15.8	9.0		42.2	50.5 K	9.5	30	0.8	24.9
9.5		57.7	29.6	9.0		28.9	15.7 M	9.7		26.3	24.7	6.4		49.0	49.7 Sj	9.6		22.4	17.0
9.4	43	2.1	9.2 M	9.1		52.1	41.3	9.4		41.4	59.4	9.2		50.1	52.0 M	9.5		27.3	7.6
8.7		16.4	1.0	8.3	0	42.6	48.6 Sj	8.3		51.2	34.8 K	9.7		56.0	19.2	9.4		30.1	53.0
9.5		17.5	57.9	9.8		43.7	16.8	9.0	12	2.4	53.0 K	9.8		56.1	22.6	8.5		35.9	16.6 Sj
8.3		25.1	13.2 Sj	9.0		50.3	22.2 B	9.2		18.8	29.2 M	9.4	21	7.1	24.5	9.8		45.0	7.4
9.4	44	4.0	6.0	9.5	1	8.6	59.3	9.3		29.3	36.3 M	9.6		12.7	4.1	8.3		46.5	42.3 M
9.4		20.2	27.5	8.8		45.8	41.5 M	10		38.5	35.2	9.2		18.5	53.2 M	9.8		48.9	35.4
9.9		37.1	12.6	7.9		45.8	0.9 Sj	9.5	13	4.1	33.7	9.5		19.9	1.1	9.0		49.8	30.7 M
9.2		39.8	0.3 M	8.4		48.7	22.3 B	9.5		14.0	57.5	9.7		37.5	33.8	10	31	21.5	47.5
9.5		45.0	0.3	9.5		54.1	6.0	9.5		24.3	36.5	9.8		50.6	5.1	9.5		32.6	26.2
9.3		55.5	31.3	9.7	2	4.6	16.6	9.0		27.7	17.0 M	9.8		57.5	9.6	9.3	32	1.3	9.5
9.8		58.6	27.7	9.2		8.1	32.8 M	9.2		30.0	59.2	9.4	22	1.0	19.8	9.6		1.9	30.8
9.5	45	7.6	10.5	9.5		10.5	13.4	9.5		34.9	53.0	5.5		3.9	21.9 Sj	9.4		8.7	26.9
9.5		12.2	39.7	9.5		11.0	14.9	9.3		48.7	47.3	9.8		8.8	47.7	9.5		15.3	28.4
9.8		19.1	28.6	9.7		33.9	23.1	8.9		53.4	51.4 K	9.5		10.9	41.6	9.4		22.2	21.1
9.2		36.3	27.3	9.6		41.5	40.4 M	9.4		58.3	16.0	9.5		11.3	50.5	7.0		39.4	9.5 K
6.2		43.0	29.2 B	8.8		57.2	33.5 M	9.5	14	5.6	18.5	9.5		19.5	57.7	9.5		46.4	59.6
9.5		48.7	14.9	8.7	3	12.1	7.1 M	9.5		8.8	57.0	8.5		23.4	39.6 K	9.5	33	19.1	53.9
8.7		56.8	4.8 K	8.3		16.8	55.4 Sj	9.5		20.4	39.9 M	9.1		27.2	3.3	9.0		38.2	11.5 Sj
9.5	46	59.1	6.7	9.6		21.8	8.9	9.1		38.8	31.4 M	9.0		44.5	57.2 M	9.5	34	9.5	41.1
9.5	47	6.1	34.5	9.3		34.9	55.4	9.0		40.4	48.8 M	9.3		47.8	57.2	9.5		13.7	35.4
9.6		26.6	30.8	9.5		57.2	32.6	9.2		56.2	5.9	9.9	23	24.3	30.2	8.0		13.9	54.7 K
9.5		43.5	6.5	9.5		58.9	1.3	9.5	15	6.9	45.8	8.5		32.8	4.3 K	9.4		36.6	53.4
9.2		57.6	6.5 M	9.5	4	5.4	54.8	9.0		7.8	26.1 M	9.3		37.0	57.1	9.4		51.9	53.8 M
9.2	48	18.2	20.4 Sj	10		6.3	1.9	9.2		17.7	8.0	8.2	24	19.0	55.8 Sj	9.4		58.1	4.1
8.3	49	8.0	22.6 K	9.7		22.2	11.5	9.2		19.4	41.6	9.5		27.5	58.0	9.7	35	6.7	4.8
9.4		14.0	24.7	9.7		35.5	15.2	9.5		24.3	40.8	9.6		33.5	28.0 M	9.5		12.4	15.2
9.1		33.2	43.0	9.9		48.8	49.9	8.8		25.8	13.6 K	8.7		35.2	4.1 K	9.6		29.6	52.2
9.4		44.1	6.8	10		49.1	22.6	9.6		28.6	1.6	9.3		44.9	22.4	10		33.5	26.8
9.5	50	34.5	37.8	9.6		53.1	34.7	9.2		45.5	57.5 M	9.5	25	8.4	20.2	9.0		49.1	0.2 K
9.5		42.6	51.9	9.5	5	1.7	3.0	9.2	16	1.9	43.4 M	9.9		16.4	51.5	9.1		49.9	12.9
6.8		55.5	56.4 Sj	6.5		12.4	25.3 Sj	9.5		2.1	26.7	9.1		16.7	9.2 M	9.5		58.1	57.4
9.3	51	7.9	3.6	9.2		37.3	41.6 M	9.5		22.0	54.0	9.3		29.0	42.5	9.4	36	14.0	44.9
9.0		11.2	37.9	10	6	12.2	40.0	9.0		32.8	42.2 M	9.1		49.3	13.7 M	9.8		33.0	24.1
10		13.4	16.1	9.0		21.4	55.5 M	9.9		43.7	26.1	8.3		50.5	50.8 K	9.6		33.7	17.2

5001—5060				5061—5120				5121—5180				5181—5240				5241—5300			
	20h		—3°		20h		—3°		20h—21h		—3°		21h		—3°		21h		—3°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.3	37	27.5	38.6	9.5	46	36.5	49.7	9.0	59	19.6	20.6	9.3	13	32.8	40.7	M	9.5	25	54.5	19.4	
9.5		29.4	8.4	9.2		45.8	12.4	M	10		36.2	10.2	9.2		37.8	39.0	M	9.8		58.4	8.7	
9.6		32.0	20.9	9.5		55.2	34.2	8.6	1	7.1	19.2	Sj	9.3		51.3	46.5		9.8	26	12.0	58.1	
9.6		36.3	54.0	9.5	47	2.9	27.4	9.5		10.5	39.9		8.6	14	12.9	48.9	M	8.7		13.9	0.4	K
9.7		59.5	40.1	9.3		33.8	12.5	M	9.6		21.6	22.2	9.3		17.0	19.8		9.8		33.5	49.0	
9.5	38	2.0	33.0	9.2		39.5	33.5	M	9.6		22.4	11.6	9.6		48.5	31.2		10		35.1	23.7	
8.8		11.1	53.5	M	10	48	4.4	59.5	9.1		23.9	39.7	M	9.1		52.4	40.4	M	9.9		49.4	6.4	
9.3		18.7	35.7	9.7		5.8	54.3	9.4		32.9	45.6		7.0		55.3	44.4	K	9.4	27	21.0	9.3	
8.9		19.2	41.2	M	9.6		11.2	19.7	9.8		57.1	33.5	9.5		55.5	11.6		9.6		23.0	55.6	
9.5		38.9	38.2	9.7		21.9	19.6	9.8	2	12.1	7.0	9.4	15	11.6	32.7		9.4		29.5	19.8	
9.5		52.8	9.9	9.4		34.7	44.0	9.8		15.7	7.9	9.0		15.4	12.0	M	9.5		44.7	28.0	
9.8	39	5.6	53.2	9.1		46.8	29.4	M	9.8		23.2	36.4	9.1		19.0	9.0	M	9.5	28	29.5	24.9	
9.0		11.3	10.7	M	9.6	49	13.2	44.3	9.6		25.1	38.3	9.8		49.8	33.1		9.5		47.5	25.3	
9.1		12.4	52.6	9.5		23.0	14.8	10		26.6	39.5	9.8		58.0	23.4		9.5		58.1	30.0	
9.4		13.4	25.7	9.3		45.4	8.5	9.3		33.0	32.6	9.6	16	8.5	14.8		9.5	29	0.5	42.9	
9.5		15.9	5.4	8.5		55.2	47.5	Sj	8.8		41.8	52.7	M	9.4		24.5	59.2		8.9		9.9	15.2	Sj
8.0		16.7	14.3	K	9.4	50	11.1	55.8	9.8	3	30.9	9.1	9.5	17	2.4	51.2		9.1		17.6	59.9	
6.8		30.8	0.6	Sj	9.4		18.7	58.6	M	8.5		53.8	59.6	M	9.8		10.2	24.6		9.4		52.4	39.5	
10		57.1	55.1		8.8		27.4	1.1	Sj	9.4	4	0.2	30.2		9.7		21.9	49.2		9.6	30	8.0	52.2	
9.8	40	17.2	34.6	9.0		36.4	40.8	K	7.4		2.2	42.1	Sj	9.8		23.0	53.9		9.8		18.2	28.0	
9.4		27.7	42.6	9.5		47.8	17.1	8.5		15.9	11.3	K	9.8		35.7	31.0		9.3		35.1	26.1	
8.7		32.6	33.8	K	9.8	51	2.3	22.8	9.5		20.0	18.2	9.5		51.4	46.6		9.3		37.4	0.8	
9.0		37.8	9.7	K	9.8		7.9	7.0	9.2		22.2	28.0	9.5	18	39.5	29.3		9.2		44.7	34.6	
9.7		42.8	47.9		7.8		15.2	52.6	Sj	9.6		23.6	42.6	9.6		47.0	53.1		9.5		46.0	1.7	
9.4		53.1	52.9		9.2		36.9	18.9		9.5		40.9	13.2	9.4		53.8	25.8		9.5		47.6	15.5	
9.7		58.4	56.1		10		56.8	44.5		9.6		46.0	42.2	8.3		57.3	36.6	K	9.5		49.1	56.2	
9.6	41	11.7	42.7		8.9	52	45.9	22.3	Sj	10		57.4	2.8	9.1		58.5	56.1		9.3		57.1	8.1	
9.3		35.5	34.0	M	9.8		47.1	11.1		10	5	0.4	59.7	8.8	19	17.9	21.5	L	9.0	31	24.6	9.6	M
9.9		35.5	26.6		9.5	53	23.8	30.8		9.7		8.7	18.0	9.3		20.5	26.2	M	9.6		43.1	16.8	
9.4		48.3	4.6		9.0		35.5	35.9	M	10		28.3	51.7	9.4		28.3	38.2		9.4	32	17.0	29.0	Sj
9.6		49.8	32.6		9.5		37.3	6.1		9.9		36.6	30.2	8.1		52.1	23.4	K	9.5		49.0	0.3	
9.7		51.7	28.1		8.0		49.8	4.9	K	10		57.9	14.0	9.7		54.8	12.4		7.8	33	0.1	9.9	K
9.5		53.8	6.3		9.5	54	15.3	52.3		9.6	6	8.8	48.8	8.7	20	20.9	46.5	Sj	9.6		17.0	3.4	
9.3	42	7.1	48.2		9.5		22.4	17.8		9.6		11.8	56.8	8.5		22.8	3.5	Sj	10		45.0	9.6	
9.3		8.6	13.8	Sj	9.1		33.7	5.7	M	8.3		31.7	20.9	L	9.5		27.5	45.0		9.9		53.0	6.2	
9.6		29.7	36.6		9.6		48.8	55.8		9.1		53.8	37.6	M	7.8		47.4	14.1	K	9.8		54.4	27.1	
9.5		31.4	30.1		9.2		55.4	3.9	M	9.8		59.7	12.1	7.3		48.4	30.4	K	9.9	34	40.1	22.4	
9.0		34.0	10.9	Sj	9.3	55	6.9	36.5		9.5	7	20.7	38.6	9.5	21	8.0	55.6		9.7		40.8	29.5	
10		39.9	39.7		9.4		33.2	51.2		9.3		28.1	29.6	9.4		37.5	22.9		9.2		46.5	5.2	
9.7		45.7	47.1		9.5		37.9	23.7		7.0		31.4	10.1	Sj	9.5		40.9	53.9		9.6	35	1.1	57.4	
9.2		52.2	25.7		8.0		51.8	8.6	M	9.7		55.8	48.6	9.5		46.8	35.7		8.8		15.0	37.3	
9.1	43	9.4	42.5		9.3	56	4.2	31.8	M	8.7	8	4.9	8.2	Sj	9.0		49.4	50.7	M	9.5		18.6	47.4	
9.0		15.7	53.5	L	9.9		15.2	32.1		9.5		30.3	50.4	9.5		56.0	20.9		8.5		22.7	4.7	Sj
9.1		16.1	17.7	K	9.5		21.4	51.9		9.6		52.0	15.5	9.8	22	25.5	6.3		9.3		25.4	11.3	
9.4		23.2	3.4	M	9.5		40.3	56.9		9.6	9	40.6	25.4	9.5		39.9	40.7		8.9		26.8	29.9	Sj
9.4		33.7	52.2		9.8		41.2	28.5		9.5		47.9	21.1	9.0		40.4	25.8	M	9.5		28.1	45.5	
9.2	44	10.8	19.6	M	9.7		46.4	4.9		9.7		59.1	42.3	9.5		41.2	42.2		9.4		40.5	42.0	
8.0		46.9	45.5	L	9.1	57	1.0	1.7	M	9.5	10	24.3	37.7	9.3		57.9	34.6		9.5	36	0.0	44.2	
9.8		54.7	31.4		9.1		1.8	39.8	M	9.4		35.6	49.8	9.9	23	11.7	58.0		9.8		6.1	54.2	
9.8		59.8	50.5		9.2		8.0	8.0		9.5		51.8	38.1	9.4		16.6	10.6		9.7		19.3	24.8	
9.8	45	10.4	1.0		9.5		11.9	34.9	M	9.4	11	1.5	21.3	9.0		36.9	39.7		9.4		38.6	53.3	
9.8		18.4	45.1		9.4		13.8	40.7		8.5		3.8	44.4	9.2	24	0.9	42.8	Sj	9.5		58.3	50.7	
9.8		37.8	12.8		9.5		27.7	5.6		9.6		23.5	18.1	10		40.4	39.3		9.5		58.3	25.0	
10		51.3	21.9		9.8		36.0	0.4		9.6		45.5	31.6	9.2		43.5	23.1		8.5	37	14.4	58.9	L
8.8		55.2	43.0	Sj	10		58.4	31.3		9.8		51.6	41.5	9.1		45.0	53.4		9.8		27.8	10.9	
9.5	46	5.9	24.9		9.1	58	4.0	2.0	Sj	8.2	12	8.8	29.1	K	9.1		48.4	32.3	K	8.0		56.9	37.1	M
8.8		15.0	4.2	Sj	9.9		23.4	31.6		9.4		35.9	34.9	8.8		59.2	41.5	M	9.8	38	4.7	12.5	
9.5		19.2	56.1		9.5		29.8	46.5		9.2	13	2.3	35.1	M	9.5	25	28.4	5.7		8.9		58.6	5.2	Sj
9.8		35.8	17.5		9.8		58.8	55.5		9.8		3.7	7.5		8.8		33.5	49.9	M	9.4	39	20.0	5.5	
9.4		36.4	45.2		9.7	59	16.8	14.6		9.8		30.8	36.0		9.5		36.4	38.9		9.2		39.3	26.1	

5301—5360

21h −3°

m	m	s	′	
9.8	40	3.2	15.1	
9.4		14.1	49.3	
9.6		53.0	45.2	
9.6		53.8	20.1	
9.5	41	9.5	37.1	
10		25.0	50.9	
9.8	42	46.6	30.2	
9.1	43	8.3	52.4	
10		20.0	5.2	
9.5		51.7	44.7	
9.7		55.8	24.3	
9.5		56.1	3.9	
9.5	44	12.9	25.9	
9.5		24.8	3.7	
9.9		40.5	8.4	
7.0		48.7	50.6	Sj
9.0		54.9	8.5	M
10	45	8.4	14.6	
9.5		12.2	40.1	
9.9		15.4	7.9	
9.6		16.9	10.1	
9.9		54.4	9.8	
9.8	46	16.3	46.0	
9.1		17.0	51.4	
9.4		17.8	48.8	
9.4		36.2	28.8	
9.4		47.2	12.6	
9.4		56.5	24.7	
6.5	47	2.9	59.0	Sj
10		3.6	59.4	
7.9		3.7	40.3	K
9.6		44.8	5.5	
9.0		48.3	44.1	
9.5		59.0	26.5	
8.7	48	1.5	43.2	K
9.5		1.7	58.6	
8.8		11.6	27.6	
8.2		11.9	19.2	K
9.2	49	3.7	41.9	
9.6		19.3	26.8	
9.3		29.5	18.4	R
9.5		48.5	24.7	
9.5	50	5.9	31.6	Sj
9.7		11.1	10.6	
9.7		11.5	14.1	
9.3		15.7	9.0	
9.6		31.8	32.2	
9.4		31.8	51.1	
9.9		38.6	27.3	
9.8		43.6	33.6	
8.4		47.5	26.5	K
9.5	51	14.9	14.0	
8.7	52	15.0	41.1	K
9.8		20.7	0.7	
9.5		44.3	13.0	
9.5		58.3	47.7	
9.1	53	5.5	26.0	Sj
9.4		8.4	23.0	
9.7		40.4	15.1	M
8.8		51.3	54.5	

5361—5420

21h—22h −3°

m	m	s	′	
8.8	54	3.1	9.9	M
9.2		14.5	3.1	
8.3	55	19.7	10.6	K
9.8		20.2	42.9	
8.5	56	1.7	46.2	Sj
9.5		15.1	11.4	
8.8		19.2	30.2	
9.5		37.8	15.9	
9.7	57	1.2	32.3	
9.8		16.1	0.7	
8.8		31.2	34.7	M
8.3		33.3	54.8	
9.7		49.3	4.4	
9.5		55.4	6.8	
8.2	58	30.6	48.7	Sj
8.8		51.5	11.1	
9.4		59.2	44.2	
9.0	59	15.3	50.9	Sj
10		56.2	21.1	
9.9	0	6.3	42.9	
10		10.1	2.4	
9.0		11.6	3.9	M
10		12.3	16.0	
9.8		13.8	43.8	
9.4		25.4	49.0	
9.4		50.4	56.2	
9.5	1	19.7	1.2	
9.4		49.2	47.7	
9.8	2	7.5	10.7	
9.5		56.7	33.3	
9.5		57.5	13.4	
9.5	3	15.3	40.9	
9.8		21.5	30.9	
8.7	4	6.3	38.8	R
9.5		22.2	32.5	
9.6		37.4	25.1	
9.6		44.3	40.0	
9.1		52.5	22.3	
9.3		55.9	1.0	Sj
9.5	5	25.8	12.5	
9.8		28.7	50.4	
9.4		39.5	56.7	
9.0		47.6	26.8	
9.5	6	0.9	20.4	
9.9		9.9	50.5	
9.5		18.8	27.9	
9.5		32.5	38.6	
9.2	7	5.4	13.8	M
9.5		10.2	6.4	
9.5		13.6	32.7	
9.5		59.3	42.9	
9.0	8	16.8	9.4	M
8.3		26.9	27.7	Sj
9.2		29.5	37.1	
8.8	9	2.7	36.1	M
9.6		15.8	9.2	
9.8		36.4	48.9	
9.6		36.9	1.4	
9.8		40.3	36.5	
8.5		44.1	43.6	K

5421—5480

22h −3°

m	m	s	′	
9.7	10	10.4	56.8	
9.0		19.7	2.7	K
9.0		32.3	53.7	
9.8		58.6	27.1	
9.6	11	20.7	31.1	
9.5		34.4	22.0	
9.5		47.2	56.8	
9.4	12	2.6	32.4	
9.5		11.7	1.8	
9.8		31.0	31.2	
9.3	13	10.1	44.1	
9.9	14	32.1	47.5	
8.8		32.4	0.4	
9.8		43.3	44.7	
9.0		53.3	10.6	K
9.8	15	25.0	52.8	
9.0		29.6	18.8	
7.7	16	3.7	1.8	Sj
9.8		19.5	50.1	
8.3		22.3	29.5	K
9.8		22.6	54.1	
9.5	17	8.9	39.2	
7.2	18	44.8	31.1	Sj
9.8	19	2.3	6.8	
9.9		24.3	2.7	
10	20	0.5	23.6	
9.4		10.5	37.4	
9.6		17.0	30.3	
10		22.1	19.5	
8.5	21	17.4	9.8	M
9.5		19.4	4.2	
8.3		50.9	57.9	Sj
9.3		57.7	28.6	
9.9	22	19.3	8.6	
9.5		50.8	3.7	
9.7		51.7	9.3	
9.8	23	15.1	33.2	
9.6		39.9	2.9	
9.5		45.0	15.6	
6.3		48.2	39.4	K
9.9	24	4.6	51.8	
9.8		47.0	43.3	
9.8		55.3	33.2	
9.1	25	18.9	41.4	R
10		51.5	33.5	
9.5	26	13.0	27.5	
9.6		35.9	16.7	
9.1	27	15.4	39.9	Sj
9.6		16.6	28.3	
9.6		18.3	50.6	
9.8		44.3	30.5	
8.3		51.3	0.3	
8.4	28	3.4	41.0	L
9.5		3.8	34.1	
9.9		59.2	59.8	
9.4	29	11.2	59.6	
10		13.9	36.9	
10	30	18.8	49.4	
9.3		25.0	21.3	
9.9		33.6	54.9	

5481—5540

22h −3°

m	m	s	′	
8.3	30	37.5	39.0	
8.4	31	27.7	46.1	K
9.7		28.4	1.1	
9.3		33.7	56.2	
9.5		54.0	9.9	
9.4	32	36.2	56.0	
8.5	34	8.8	18.4	
9.1		27.8	35.7	
9.5	35	21.6	48.2	
8.7		26.5	13.0	L
8.2		27.3	26.0	K
9.6		31.5	16.6	
10		56.8	57.9	
9.5	36	15.4	6.8	
9.5		25.7	7.9	
9.0		35.1	17.3	L
9.4		39.8	30.2	
9.4		56.5	0.8	
9.4		59.6	50.5	Sj
9.3	37	7.2	3.2	
8.5		35.1	25.1	S
10		45.4	6.7	
8.9		50.5	0.8	M
10	39	8.0	34.7	
7.5		42.8	28.8	B
9.3	40	0.9	7.1	
9.0		15.4	35.5	M
9.2		19.6	47.9	
9.0		23.7	38.9	
9.0		26.5	20.3	B
9.8		29.2	59.0	
9.8		38.9	28.4	
9.7	41	37.4	25.0	
9.7		37.6	22.5	
8.9	42	15.5	7.5	K
9.1		23.6	14.0	Sj
8.3		27.6	35.1	Sj
8.8		48.5	11.6	K
10	43	4.7	0.4	
9.8	44	19.7	34.2	
7.8	45	11.6	23.4	Sj
9.5		39.4	3.2	
9.2		40.1	44.1	
9.2		46.1	14.8	
9.3		48.6	15.7	
8.3	46	3.5	4.3	K
8.5		49.1	37.2	K
9.5		59.5	7.4	
9.8	47	39.2	42.5	
8.3	48	9.3	37.0	Sj
9.5		32.6	17.9	
9.5		33.6	43.5	
9.3	49	31.7	54.8	
9.0		34.2	35.5	L
9.5		35.0	4.7	
8.3		56.3	55.5	K
10	50	3.0	15.8	
8.9		8.8	57.1	B
6.3		47.3	10.1	Sj
9.8		54.5	29.7	

5541—5600

22h—23h −3°

m	m	s	′	
9.8	51	6.1	16.2	
9.8		24.8	43.2	
9.3		47.3	2.8	M
8.2	52	0.1	39.4	Sj
7.8		20.5	13.1	K
9.1		30.6	38.4	L
9.5		37.6	34.3	
9.5		41.6	36.9	
9.2		44.1	3.3	K
9.3	53	8.7	14.7	
9.4		47.5	24.3	
8.8	54	8.5	25.7	K
7.8		27.5	27.6	K
9.3		27.8	45.6	
9.4	55	2.9	59.0	
9.8		13.7	2.8	
9.0		15.5	14.5	L
9.9		36.1	31.5	
9.0	56	5.5	20.3	
9.6		37.6	5.1	
9.8		47.0	45.0	
9.7	57	0.6	39.1	
9.5		27.6	41.8	
9.8	58	17.2	1.1	
9.7		23.1	52.3	
10	59	4.0	52.3	
9.6		40.2	0.4	
9.8	0	17.3	10.4	
9.8		27.8	47.3	
9.8		34.0	58.1	
9.2		51.8	15.3	
10	1	15.0	53.6	
9.5		18.4	56.7	
9.2		30.2	36.5	
9.1		33.8	19.9	L
8.0		35.8	14.3	K
8.2		37.2	2.4	K
10		57.7	0.9	
10	2	8.7	13.1	
9.6	3	10.4	51.8	
9.8		26.7	37.8	
9.8		47.9	42.2	
9.7		55.8	46.5	
8.3	4	8.8	53.2	K
9.4		12.1	17.0	
9.3		19.9	2.5	
10		22.7	24.7	
10		44.9	46.5	
9.5	5	48.5	32.2	
9.3	6	5.9	51.3	
9.8		30.0	32.9	
7.1		38.9	25.2	K
9.5		55.9	33.5	
10	7	38.8	15.9	
9.8		53.7	33.7	
9.6	8	10.8	4.0	
9.5		10.9	27.9	
9.5		28.2	10.1	
9.5		34.9	59.3	
9.0		44.5	56.2	

5601—5630

m	23h m s	−3° ′	
9.8	9 8.0	55.9	
9.4	28.8	43.2	
9.5	47.7	4.0	
10	53.5	58.6	
9.4	10 9.8	38.7	
9.4	10.3	43.0	
8.7	28.4	48.8	K
9.5	31.1	24.2	
9.0	32.3	29.4	M
9.5	37.6	43.3	
9.4	47.6	27.5	
9.7	11 16.3	8.6	
10	23.0	43.2	
9.1	36.7	25.6	L
10	39.7	11.5	
9.5	43.2	28.2	
9.5	12 17.7	43.7	
9.5	24.5	9.0	
9.0	24.9	52.8	L
8.9	55.8	42.5	K
9.4	13 32.1	15.9	
9.2	35.7	4.5	
9.4	48.0	50.1	
9.2	57.4	51.5	M
9.8	14 12.0	58.7	
10	15 14.0	1.7	
9.6	39.8	0.4	
10	47.9	3.9	
9.5	54.8	44.4	
9.2	17 10.7	3.1	

5631—5660

m	23h m s	−3° ′	
9.0	17 33.5	54.4	
9.3	47.0	28.5	
9.8	18 2.4	43.6	
9.5	13.5	52.3	
10	19.0	36.4	
9.5	28.8	14.5	
9.5	19 17.0	30.3	
9.0	27.0	42.5	Sj
7.3	46.3	25.6	K
9.8	20 24.1	49.6	
9.8	32.3	30.4	
8.8	37.6	15.3	K
8.6	40.6	14.7	K
8.3	21 0.4	26.8	K
9.8	20.1	43.3	
9.3	46.5	50.3	
9.5	22 10.0	32.9	
9.3	23.6	59.7	
9.1	50.0	46.9	R
9.7	23 52.4	6.7	
8.5	24 41.5	49.8	K
9.3	42.1	7.3	
9.9	25 7.9	5.7	
9.4	15.1	54.9	R
6.8	28.0	48.8	Sj
10	28.4	5.9	
9.0	45.1	56.2	K
9.4	59.7	26.8	
10	26 4.2	48.1	
9.5	13.5	31.2	

5661—5690

m	23h m s	−3° ′	
7.7	26 15.4	2.4	K
9.8	32.1	38.1	
9.6	52.3	0.9	
9.7	27 12.2	6.9	
10	27.1	1.0	
10	50.0	27.6	
10	57.9	14.7	
9.8	28 0.9	20.7	
8.0	29 18.0	45.5	K
9.5	49.0	43.8	
9.8	30 41.1	49.0	
9.4	42.2	40.7	
10	53.8	11.1	
10	31 12.0	21.4	
9.8	12.5	16.5	
9.4	20.1	34.1	R
8.5	22.5	45.8	K
9.4	34.7	58.7	
9.6	45.5	8.0	
9.1	47.7	14.4	
9.8	50.8	58.9	
9.0	59.0	56.7	
9.3	32 5.5	40.1	
9.8	14.3	26.0	
9.7	38.0	24.4	
9.6	42.3	17.1	
10	33 20.0	16.4	
8.7	47.0	39.7	K
9.3	50.2	56.9	
9.5	53.1	55.5	

5691—5720

m	23h m s	−3° ′	
9.5	34 45.8	22.1	
9.6	58.2	57.6	
9.1	35 10.7	56.8	
9.4	59.5	4.9	
9.5	36 30.0	43.8	
8.8	59.3	15.4	
7.0	37 6.2	58.6	K
8.9	57.1	25.5	M
9.9	38 14.2	29.0	"
10	47.1	28.2	
9.5	56.1	30.2	
9.0	39 2.3	48.7	
9.8	11.2	57.4	
9.5	40 5.2	7.6	
9.2	18.3	33.5	R
9.2	25.2	6.7	
5.4	28.8	33.7	K
9.6	41 16.7	47.9	
9.7	24.0	36.5	
9.5	34.3	17.0	
9.7	55.0	22.8	
10	42 7.3	48.7	
9.1	18.3	22.1	L
9.5	24.9	32.9	
9.8	55.2	57.5	
9.5	59.9	47.7	
9.4	43 16.9	26.8	
8.5	44.1	19.5	K
9.0	44 13.8	20.6	K
8.9	45 8.9	10.3	L

5721—5750

m	23h m s	−3° ′	
9.5	45 19.3	58.8	
9.3	27.9	23.9	
6.0	29.3	57.5	K
9.4	42.4	23.2	
9.5	48.0	11.2	
10	46 21.0	9.0	
9.1	30.8	1.7	
8.5	47 9.6	47.1	K
9.6	20.8	52.5	
9.5	34.8	12.5	
9.1	48 8.9	8.2	
9.3	28.7	55.5	
9.8	40.4	43.0	
8.8	40.4	28.9	L
8.8	49 37.2	47.0	K
8.8	37.8	25.4	L
9.5	47.3	57.2	
8.7	50 35.8	10.5	Sj
9.7	51 24.6	36.7	
10	52 3.1	25.0	
7.3	5.1	39.0	L
9.3	50.5	45.4	
9.9	58.7	38.7	
9.1	53 3.5	11.6	
9.8	14.3	56.4	
8.8	49.6	8.6	B
9.8	51.8	58.6	
9.5	55.0	22.3	
5.3	54 23.2	50.0	K
7.2	36.2	34.4	K

5751—5757

m	23h m s	−3° ′	
9.2	54 42.8	37.5	
8.7	55 22.0	43.3	K
9.8	53.3	50.8	
9.5	56 28.6	22.0	
9.5	29.6	50.4	
9.8	57 50.2	17.1	
10	51.5	39.5	

5758—5763

m	23h m s	−3° ′	
9.4	58 53.2	18.7	
10	57.7	34.1	
9.2	59 35.7	8.5	
8.8	45.8	31.2	M
9.8	50.5	45.0	
9.6	57.6	36.5	

Zone −4°

1—40					41—80					81—120					121—160					161—200				
	0h		−4°			0h		−4°			0h		−4°			0h—1h		−4°			1h		−4°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.5	0	45.6	7.3		9.3	17	15.8	15.7	M	9.5	34	12.1	40.6		9.7	52	21.7	10.0		9.7	6	36.4	57.8	
9.2	1	15.4	29.5		9.1		16.3	1.2	M	10		15.9	19.2		9.9		31.0	22.8		9.8		51.7	11.3	
9.5		56.6	28.2		8.7	18	2.4	47.6	K	9.0		30.5	45.8	K	10		31.4	5.4		8.9		56.7	4.5	
9.2	2	18.0	29.4	K	9.3		15.6	30.7	Sj	9.5		45.1	50.4		9.3		34.8	14.0		9.5	7	4.8	15.2	
9.3	3	36.6	36.2		9.0	19	32.4	45.8	Sj	7.5	35	38.4	38.8	Sj	9.9		52.9	17.5		9.4		38.3	28.9	
10		42.8	59.4		9.4		47.7	30.4		9.6		57.7	11.4		10	53	17.6	23.9		8.9		38.8	32.8	K
6.8		44.0	7.5	K	9.3	20	2.3	56.0	K	9.5	37	17.0	45.8		9.4		44.5	48.5		9.6	8	3.6	1.4	
10	4	8.1	5.9		9.6		39.8	21.2		9.2		26.3	59.3		9.4	54	8.1	58.6		9.4		22.0	8.3	
9.7		35.0	0.1		10	21	4.7	24.4		9.5		47.2	41.0		9.0		21.0	23.2	Sj	9.8		24.1	49.8	
9.1		41.2	48.7	K	9.2		56.8	3.7		9.7		49.1	37.9		10		38.5	15.8		9.7	9	5.8	8.1	
7.2	5	29.8	11.2	K	7.4	22	5.7	16.3	K	10	38	5.0	19.6		9.2		58.2	15.8		10		9.5	15.8	
7.8	6	35.2	42.5	Sj	8.9		13.9	49.0	L	8.9		19.9	29.1	Sj	9.2	55	19.5	15.2		9.8		36.1	22.5	
9.5		41.7	29.0		9.4		22.5	11.1		9.4		32.3	26.2		9.4		56.8	35.7		9.6		57.3	34.6	
9.4	7	4.3	17.9		5.5		37.9	45.2	K	10	39	53.1	23.1		9.0	56	10.4	0.8	R	8.7	10	3.6	58.8	
9.5		50.3	43.2		9.1	23	53.9	45.3		8.0	40	39.9	30.3	Sj	9.3		12.4	18.7		9.5		25.7	0.1	
9.4		50.8	46.4		9.5	24	13.0	12.5		9.2		45.3	6.1	M	9.0		40.3	52.3	K	10		31.3	34.1	
8.8	8	2.0	27.7	K	9.4		40.8	11.2		9.0	41	14.2	39.7	K	9.4	57	2.8	31.1		9.3	11	20.2	53.3	
9.5		47.8	47.7		10	25	46.9	23.6		10		14.7	16.0		9.5		10.6	44.5		9.8		27.1	3.6	
9.5	9	43.8	45.6		7.5		47.8	39.1	Sj	9.9		45.5	14.7		9.0		14.0	0.3		9.3		28.3	57.3	
10		43.9	59.9		8.7	26	0.5	50.5	Sj	9.1	42	3.1	12.0	K	8.5	58	1.3	9.6	K	10		30.6	24.0	
9.7		44.2	4.6		9.4	27	28.2	9.6		9.5		36.5	4.4		9.8		40.1	21.7		9.2	12	1.2	26.1	
9.2		56.7	30.9		5.0		47.6	23.2	Sj	9.1		36.7	48.2	K	10	59	22.8	10.9		9.3		36.9	4.2	
9.0	10	18.3	42.1		9.5	28	16.9	57.4		9.5	43	12.6	56.1		8.8	0	11.6	59.2	K	9.1	13	4.4	17.4	
9.5		22.1	4.6		8.2	29	33.1	11.8	Sj	10	44	23.0	56.3		9.1		46.3	25.6		10		10.7	7.8	
9.1		36.6	10.2		9.1		34.8	27.6		8.5		26.2	52.4	K	9.5	1	17.0	43.5		6.5		12.8	0.4	K
9.3	11	54.5	25.4		9.4		35.6	46.3		9.2	45	18.6	4.5		9.5	2	2.2	53.3		9.3		46.2	25.9	R
9.8		56.9	56.4		9.3	30	18.5	28.3		10		43.3	41.0		9.5		24.4	33.8		9.9		52.9	35.5	
9.5	12	36.8	6.4		9.5	31	30.2	53.5		9.6		59.6	26.4		9.7		57.1	20.3		9.1		58.2	53.3	
8.7	13	25.1	55.3	Sj	8.7		44.7	58.5	Sj	10	46	31.4	51.0		9.8	3	3.0	41.5		8.5	14	20.4	11.8	K
8.7		27.0	33.2	Sj	8.7		45.6	47.1	K	9.6		34.0	59.2		9.6		58.9	37.6		10		44.3	59.5	
8.0		47.5	7.0	K	9.5	32	27.0	33.3		9.2	47	44.2	37.7	K	8.8	4	25.6	12.1		9.6		57.8	28.2	
8.6	14	4.0	27.0	K	9.5		37.0	36.0		8.7	48	19.9	46.8	K	9.5		57.5	47.9		9.8	15	9.2	55.9	
9.2		4.3	34.4		9.5		44.0	28.5		10		34.7	38.1		8.9	5	35.3	8.4		7.8		11.9	33.6	K
9.0		13.1	9.3	K	9.0		47.4	53.0	Sj	7.3		39.4	31.3	Sj	9.0		35.7	46.8		9.0		24.7	24.4	K
10		50.8	26.0		9.2	33	4.8	57.4		9.3	49	36.6	27.4		10		39.2	6.2		9.6		28.0	38.5	
9.4	15	7.8	34.5	K	9.5		6.4	9.2		9.8	50	4.7	56.8		9.8		51.6	0.5		9.2	16	3.7	59.1	
9.6		21.3	57.2		9.7		12.8	58.5		9.2		11.2	33.8		8.5	6	9.8	5.3		10		17.9	6.0	
8.5		41.5	24.4	K	9.5		32.0	32.1		9.5		19.9	3.3		9.0		14.7	22.9		9.5		18.9	32.5	
8.8	16	24.2	55.9	Sj	9.0		36.6	53.2	K	9.5		32.4	44.3		9.3		19.8	6.6		8.8		40.7	53.1	
7.6		35.0	16.6	Sj	9.5	34	4.1	50.0		9.6	51	12.7	56.4		9.5		21.7	4.3		9.8	17	0.3	27.6	

201—260

m	1h m	s	—4° ′	
9.8	17	9.4	37.3	
9.3		32.3	20.3	
8.5		42.3	55.3	
10	18	16.8	53.6	
9.0		19.8	30.2	Sj
9.8		29.7	48.0	
6.8		31.5	40.8	K
9.4		48.7	56.9	
9.8		49.8	20.1	
9.8	19	30.7	25.0	
10	20	7.8	25.5	
9.3		13.5	55.7	
8.1		34.3	19.6	K
9.1	21	13.0	38.0	
9.8		54.5	13.1	
9.0	22	2.3	53.5	
9.4		17.8	49.4	
8.8		21.3	51.4	Sj
9.8		22.3	31.7	
8.8		26.8	11.9	
9.0		27.8	5.1	K
9.2		37.4	20.2	
9.5		54.1	10.5	
9.0	23	53.3	22.9	
10	24	38.0	38.8	
9.4	25	10.8	38.5	
9.7		16.9	21.5	
9.6		17.3	28.0	
10		37.3	25.9	
9.1	26	10.3	15.5	
9.5		13.2	43.8	
9.4		23.6	6.0	
9.8		31.9	50.8	
9.0	27	9.0	3.5	
9.6		14.1	9.8	
9.3		26.7	11.4	
6.3		30.8	15.9	L
9.7	28	4.8	22.0	
9.7		8.0	3.9	
9.9		42.6	55.8	
10		53.2	41.5	
9.7		55.9	15.3	
9.3	29	2.0	2.4	R
9.6		7.3	49.5	
9.5		12.1	50.4	
9.6		36.2	0.7	
8.6		40.6	1.5	K
8.0		52.9	52.6	K
6.7	30	31.6	10.7	Sj
9.2		32.6	12.5	
10		54.7	5.8	
9.5	31	17.5	32.7	
9.1	32	45.1	4.6	
10	33	28.5	31.3	
9.5		31.0	40.7	
9.9	34	28.3	19.7	
10		32.7	37.8	
9.3		33.4	47.6	
8.3	35	0.7	9.4	K
5.3		23.5	25.5	K

261—320

m	1h m	s	—4° ′	
9.4	35	52.0	55.5	
9.1		55.3	15.1	
9.8	36	55.9	14.4	
8.7	37	11.9	11.8	Sj
10		39.0	7.0	
9.8		51.2	37.7	
9.5	38	1.4	22.5	
9.6		22.6	2.1	
7.8		38.7	57.0	Sj
10	39	20.9	20.5	
8.8	40	32.7	3.3	K
9.5		50.0	53.6	
10	41	3.5	43.7	
10		17.7	4.6	
9.4		40.6	46.0	
9.8		42.7	59.2	
9.1		46.3	41.1	
9.0	42	19.5	27.5	
9.6		25.7	1.3	
9.0		40.5	25.4	K
9.0		43.1	50.9	
8.0	43	10.6	25.2	K
10		54.3	35.0	
10	44	5.2	5.8	
7.3		8.5	56.3	K
9.2		30.1	13.4	
9.0		34.2	23.3	
9.2		50.1	33.4	
9.0		57.7	2.7	R
9.3	45	0.0	9.5	
10		19.3	38.8	
9.8		33.1	15.0	
9.3	46	17.9	16.0	
9.9		54.7	30.9	
9.5		59.7	10.9	
9.4	47	4.6	23.3	
10		9.5	41.7	
9.5	48	3.3	1.7	
10		9.6	26.5	
9.5		10.2	32.5	
9.5		22.6	14.9	
8.7		23.6	51.0	Sj
7.8	49	0.1	53.5	K
9.3		14.5	14.4	
9.8		50.3	7.2	
9.6	50	12.2	29.4	
8.3		36.4	25.1	Sj
9.0	52	2.1	49.8	
8.8		17.5	13.1	K
9.8		39.5	44.6	
7.7		50.0	59.6	L
7.0		55.5	4.1	Sj
9.7	53	0.7	51.2	
8.5		15.4	38.6	
10		19.1	22.0	
8.7		46.7	58.5	K
9.8		58.9	49.6	
9.2	54	13.4	5.5	
9.2		34.5	13.4	
9.1		41.8	31.1	

321—380

m	1h—2h m	s	—4° ′	
9.3	54	45.5	23.7	
9.5	55	30.5	14.5	
9.0		51.0	40.8	
6.0	56	22.6	47.9	B
9.0		29.0	40.4	
9.5		38.7	22.0	
9.2	57	10.0	40.0	
9.8		21.3	32.8	
9.5		42.0	39.1	
9.0		52.2	11.9	
9.5	58	23.4	56.6	
9.0		29.3	32.3	
8.9		56.3	31.0	K
9.8	59	14.4	6.3	
10		25.4	7.2	
9.6		31.4	5.6	
9.8		41.3	58.5	
7.5		44.3	54.4	Sj
10	0	21.3	29.8	
9.9		34.7	25.3	
10	1	16.6	16.9	
9.4		21.1	57.4	
9.0		48.5	7.7	
9.3	2	9.2	26.8	
9.4		34.3	50.6	
9.7		34.7	55.1	
9.7	3	3.6	11.3	
9.1		4.5	25.6	
9.9		8.7	22.0	
8.2		15.4	5.8	K
9.8		50.1	11.0	
9.8	4	12.9	28.8	
9.8		17.5	21.0	
9.5		17.8	36.2	
9.8		52.9	2.8	
9.3		58.7	47.2	
9.4	5	9.3	22.8	
9.0	6	1.0	36.9	
9.2		7.2	59.4	
9.0		22.8	27.6	
8.5		55.7	18.5	K
9.0	7	9.6	40.5	
10		37.3	54.1	
9.0	8	18.9	5.0	K
9.4		33.8	55.9	
8.4		39.2	46.1	Sj
8.3		48.5	32.5	Sj
9.9		53.5	35.2	
10	9	4.0	12.0	
9.5		25.9	27.3	
9.6	10	5.8	17.2	
9.0		46.4	30.6	
10		54.5	48.2	
8.3		58.2	46.0	K
8.9	11	21.3	9.3	
9.4		26.1	41.2	
10		35.2	44.4	
8.6	12	0.8	47.5	WC
8.5		48.0	12.0	K
9.6	13	13.1	51.1	

381—440

m	2h m	s	—4° ′	
9.7	13	22.7	14.4	
9.0		38.1	46.0	
9.9	14	51.3	23.2	
9.4		53.0	33.2	
9.2	15	39.0	34.8	
9.4		43.9	20.8	
9.9		53.8	14.4	
9.5		59.0	59.6	
9.8	16	6.4	50.4	
8.6		21.5	2.0	K
9.3		46.5	50.9	
9.8	17	5.9	23.0	
9.8		6.6	31.1	
7.0		38.9	33.0	L
9.7		47.8	4.6	
8.5		51.3	32.1	L
10		59.1	32.4	
10	18	14.8	8.9	
9.8	19	3.6	50.3	
9.0		6.8	32.3	K
9.5		43.9	5.8	
9.1		45.4	10.1	
9.4	21	11.1	52.8	
8.5		14.4	5.4	K
9.8	22	9.0	11.6	
9.8		25.7	33.8	
9.2		39.1	51.2	
9.5	23	19.5	15.0	
9.5		41.9	1.9	
9.8		54.1	25.7	
9.6	24	2.0	54.6	
8.3		19.3	37.6	K
9.8		19.3	4.9	
9.4		44.7	28.1	
9.4		54.3	13.9	
9.4		54.5	48.7	
10	25	19.8	2.5	
9.8		52.3	29.0	
9.1	26	1.2	29.0	Sj
9.8		5.8	8.6	
9.2		19.5	10.8	
9.1		29.7	55.0	
9.5		43.3	11.9	
9.2		57.6	53.7	
9.5	27	11.9	52.8	
7.0	28	3.7	10.9	K
9.5		12.8	39.0	
8.5		15.9	5.9	K
9.5		44.7	29.4	
9.0		49.6	48.5	
8.2		49.7	54.4	K
9.4		59.9	41.9	
8.3	29	33.9	12.0	L
8.3		54.8	32.3	
9.4	30	13.7	20.5	
6.0		23.3	1.7	Sj
9.5		34.2	26.4	
9.8		40.6	26.4	
9.2		42.5	58.4	
9.6	31	31.8	29.1	

441—500

m	2h m	s	—4° ′	
9.3	31	57.2	18.5	
9.4	32	1.8	8.2	
9.5		53.0	42.0	
9.8		53.2	11.9	
9.5	33	7.5	37.4	
8.6		20.3	20.3	K
9.4		23.6	45.2	
9.6	34	6.1	20.1	
9.2		19.8	27.5	
10		27.4	43.0	
9.5		58.7	28.3	
9.2	35	22.3	6.1	
8.9		25.2	23.6	
8.8		35.1	56.1	
9.6		38.2	15.5	
9.2		46.2	53.8	K
9.4		52.1	46.0	
10	36	19.9	14.1	
9.5		36.7	7.1	
10		41.6	46.8	
10		50.8	28.5	
9.5	37	25.4	49.8	
9.3		54.7	22.0	
9.8	38	48.6	44.1	
9.4	39	13.6	47.1	
9.8		18.5	37.8	
9.8	40	7.9	55.5	
9.6		27.5	58.6	
9.4		36.9	57.9	
7.3		56.3	14.1	K
9.5		59.7	46.2	
9.6	41	8.1	4.9	
9.4		18.4	32.5	
9.5		30.1	58.6	
9.3		41.1	41.8	
7.0		46.7	49.6	K
9.1		47.4	41.8	K
9.8	42	21.8	21.9	
8.7		25.4	9.3	K
10		26.7	48.7	
9.1	44	3.0	1.6	
9.5		6.2	44.9	
9.0		31.3	3.9	K
9.5	45	23.8	22.6	
9.5		45.7	22.6	
9.5		53.0	18.6	
9.1	46	0.7	19.2	K
9.5		7.9	3.4	
9.4		9.9	5.4	
9.8		23.7	8.3	
7.5		27.8	50.2	Sj
9.5		41.1	21.7	
9.4		52.7	46.5	
9.4	47	19.3	59.6	
9.6		44.8	24.8	
8.7		55.9	54.4	
9.4	48	0.0	34.1	
9.1		17.0	33.0	K
10		34.0	15.3	
9.6		47.3	53.5	

207: UA var $6^1/_2$—$<7^1/_2$

501—560

	2h—3h		—4°	
m	m	s	′	
9.6	48	51.2	9.3	
5.3	49	20.7	17.8	Sj
9.3		56.7	58.5	
9.1		57.2	42.1	Sj
9.8	50	56.7	43.9	
8.0	51	25.4	47.2	K
9.5		32.9	27.8	
9.9		42.1	12.2	
9.8	52	3.9	55.5	
9.4		6.0	33.6	
7.8		17.7	41.8	
8.0		51.1	15.2	K
9.4	53	18.5	21.2	
9.8		58.8	48.0	
9.0	54	51.4	27.0	
9.3		55.5	31.9	
9.5		59.0	33.0	
9.8	55	26.6	35.6	
9.0		50.4	2.5	K
8.0	56	57.3	53.9	K
9.8	57	16.0	10.5	
10		17.2	0.4	
9.2		36.7	35.9	
9.5	58	26.9	17.6	
9.2		46.5	22.3	
9.2	0	1.7	34.7	
10		19.5	57.6	
9.4		39.4	12.3	
8.3	1	11.1	8.7	Sj
9.5		29.0	28.0	
8.7		29.7	14.9	K
9.5		35.5	22.0	
9.6		58.0	26.7	
9.4	2	39.7	37.0	
9.5		41.7	36.1	
9.4		50.6	6.0	
8.5	3	7.7	37.1	K
9.4		24.5	58.4	
9.6		42.3	42.6	
6.4	4	3.6	22.0	K
9.3		7.5	24.0	
9.5		33.6	6.1	
9.3		52.1	58.4	
10	5	5.2	56.2	
9.9		17.6	25.6	
9.8		25.1	55.3	
9.4		31.4	10.6	
9.3		35.9	46.8	
9.5		36.0	29.9	
9.5		48.0	2.7	
9.2	6	14.9	50.6	K
9.8		22.3	42.8	
9.4	7	4.1	28.3	
9.1		18.2	15.2	
9.5		32.0	23.7	
10		48.5	20.9	
10	8	11.4	19.3	
6.8	9	13.1	49.0	K
9.5		20.0	59.5	
7.5		24.2	4.1	K

561—620

	3h		—4°	
m	m	s	′	
7.5	9	55.2	40.1	Sj
9.5		56.6	26.4	
9.4	10	2.9	43.7	
9.5		26.2	43.9	
8.9	11	2.0	45.2	K
9.7		13.6	26.2	
9.7		33.3	36.4	
9.1		59.7	30.0	
10	12	39.8	38.0	
8.5	13	24.1	52.7	Sj
9.0		35.8	50.5	K
9.3	14	12.9	14.7	
9.4		13.6	57.6	
10		31.4	15.2	
9.6		43.7	18.8	
9.8	15	1.5	5.2	
9.5		26.1	23.9	
9.5		40.8	38.1	
9.8		56.6	50.2	
9.5	16	4.2	4.0	
9.5		10.3	18.1	
9.8		22.5	45.5	
9.1		25.7	1.4	
9.5	17	11.3	33.5	
8.0		17.2	2.9	K
6.9		55.8	59.5	K
9.8		55.8	2.9	
9.5	18	5.7	54.8	
9.3		24.3	4.6	
9.7		26.1	42.5	
8.7		38.3	35.1	K
9.7		42.8	29.3	
8.5		58.9	53.0	K
9.6	19	1.2	6.8	
10		31.7	11.6	
10		50.6	46.2	
9.5		59.0	45.8	
9.5		59.2	59.1	
9.8	20	33.7	34.0	
10		46.7	0.6	
9.2		55.0	57.7	
9.4	21	0.3	5.8	
10		54.3	46.2	
8.6		59.5	17.9	K
9.3	22	2.2	20.0	
9.3		39.7	49.0	
9.9	23	3.9	47.4	
9.8		20.9	51.9	
7.8		26.1	46.6	K
10		33.0	28.5	
9.8		57.2	4.1	
9.0		57.6	20.7	
7.3	24	23.7	0.0	K
9.0		23.9	21.1	
9.6		45.7	12.0	
10	25	1.4	23.9	
9.1		3.5	27.7	
8.1		11.5	51.3	K
8.4		29.7	54.6	K
9.3		57.8	29.6	

621—680

	3h		—4°	
m	m	s	′	
8.4	26	10.9	52.2	K
8.0		20.7	29.1	K
9.8		27.0	4.0	
9.6	27	21.3	48.5	
9.5		23.5	30.5	
9.5	28	2.3	44.3	
10		8.9	45.8	
9.5		28.3	30.0	
9.0		29.8	51.0	K
8.7		30.8	20.7	K
9.1		35.6	3.7	
8.5	29	11.6	7.0	Sj
9.9		43.5	9.9	
9.7	30	2.4	7.0	
9.8		20.3	25.4	
8.9		50.9	48.6	K
9.9	31	3.1	41.5	
9.2		35.9	10.8	Sj
9.4		45.8	25.7	
9.0	32	4.9	46.9	K
9.1		24.3	37.7	
9.1		25.8	15.8	
9.4		30.3	47.3	
9.9		47.8	34.2	
9.1		59.0	42.6	
9.9	33	30.0	59.1	
8.3		32.9	37.2	Sj
9.8	34	59.5	58.5	
9.6	35	13.3	18.9	
9.2		14.0	19.1	
9.8		29.4	36.0	
9.0		32.7	49.7	K
9.2		55.1	2.6	
9.4	36	14.7	25.1	
8.5		41.2	44.2	K
9.5		57.4	25.3	
9.6	37	3.9	26.2	
9.5		19.8	19.5	
9.8		41.0	50.5	
9.8	38	13.9	44.5	
9.5		17.8	20.3	
9.5		42.3	19.9	
9.4	39	30.9	22.3	
9.5		54.6	1.4	
9.4	40	2.2	31.7	
9.7		15.4	56.6	
9.1		44.4	31.6	
8.4	41	16.0	58.4	K
9.2		23.4	19.4	
7.3		24.7	52.0	K
9.5	42	1.0	52.2	
8.7		18.4	58.1	K
9.8		35.0	56.4	
7.5	43	4.0	19.7	Sj
9.8		31.6	38.0	
9.4		35.5	9.4	
9.5		41.7	50.5	
9.6	44	1.1	28.9	
9.4		10.0	15.9	
9.3		37.9	15.9	

681—740

	3h—4h		—4°	
m	m	s	′	
9.5	44	49.4	17.0	
7.8		53.2	2.2	K
8.9	45	40.8	53.1	K
7.5		48.0	48.0	Sj
9.4	46	17.6	1.6	
9.1		18.9	24.5	
9.5	47	3.6	43.0	
9.4		18.9	30.9	
7.8		21.5	35.1	
8.5		32.5	47.0	Sj
9.8		46.9	28.8	
9.7		58.9	21.0	
9.5	48	9.9	54.2	
7.2		37.4	56.8	K
9.8	49	26.2	32.0	
9.4		26.5	7.6	
9.8		31.2	1.5	
9.8	50	13.3	46.1	
8.3		15.0	38.3	Sj
9.5		24.3	41.3	
9.7		24.4	45.8	
9.7		40.7	45.6	
9.8		41.8	57.1	
9.0	51	5.9	6.1	
9.6		13.4	39.8	
7.5		25.0	3.6	K
9.5		37.1	59.9	
10	52	6.0	49.4	
8.2		38.8	56.1	Sj
9.2		40.6	51.4	
9.2		55.9	12.1	
9.1		59.9	27.7	
9.8	53	13.5	38.6	
9.3		26.0	30.1	
9.5		47.7	43.8	
9.0	54	1.6	47.8	
9.8		25.0	21.7	
9.4		26.5	34.8	
9.0		40.5	32.1	
10		48.6	47.1	
8.8		59.5	27.3	
8.3	55	2.5	55.4	Sj
8.3		3.6	42.1	K
9.4		7.5	25.7	
9.3	56	32.0	8.1	
8.8	57	6.6	36.8	K
9.0		33.9	1.4	
10		40.8	37.6	
8.7		59.1	30.5	K
9.3	58	41.4	16.3	
9.4		42.3	41.4	
9.8	59	5.6	22.4	
9.8		14.0	51.0	
9.5		21.2	52.6	
9.0		26.1	45.5	
8.8		53.1	45.6	Sj
9.5	0	4.1	51.7	
9.2		13.5	38.7	
9.4		29.6	36.6	
10		32.8	14.1	

741—800

	4h		—4°	
m	m	s	′	
9.5	0	43.7	32.5	
8.3		45.5	34.4	Sj
8.5		46.0	23.5	K
8.3	1	18.5	24.1	L
8.0		42.9	55.0	K
9.5		48.6	25.4	
10	2	23.6	15.4	
9.1		25.4	16.8	
9.7		34.1	46.3	
9.5		53.7	12.1	
8.4	3	12.7	18.9	Sj
9.5		26.1	48.0	
8.5		38.6	41.2	K
10		51.2	28.4	
9.6		51.3	42.2	
10	4	0.7	59.5	
9.0		16.8	7.7	K
9.0		32.5	2.5	K
9.1		40.8	30.0	
9.5		47.1	48.3	
9.8		55.7	39.6	
8.7	5	7.7	19.2	
7.0		9.1	46.8	L
9.7		12.4	17.3	
8.9		13.1	39.9	
9.1		18.0	34.3	
9.0		29.7	30.3	
8.9		34.5	23.1	K
9.6		48.9	54.9	
7.8		50.6	41.0	L
7.4		58.9	15.1	Sj
9.6	6	2.4	7.2	
9.0		2.7	16.8	
8.5		5.6	38.1	L
9.7		16.0	15.0	
9.7		16.3	10.5	
9.7	7	6.5	55.5	
9.6		16.7	15.6	
10		30.9	14.3	
9.6		36.2	35.3	
9.8		55.5	42.0	
9.0		57.0	47.0	K
9.5		57.5	31.5	
9.0	8	3.4	43.0	
9.1		12.7	12.5	
9.0		42.1	48.6	
9.5		42.9	3.3	
9.5	9	0.8	1.1	
9.0		17.6	46.4	
9.3		30.7	52.0	
9.5		38.6	46.2	
9.1	10	24.6	3.3	
9.0		50.2	52.7	
9.5	11	10.3	24.3	
8.8		14.1	52.7	K
9.1		19.6	25.4	
9.5		52.1	30.4	
10	12	30.2	40.1	
7.3		46.5	47.0	K
8.5		59.7	50.6	K

540: goldgelb

801—860				861—920				921—980				981—1040				1041—1100			
	4h		−4°		4h		−4°		4h		−4°		4h		−4°		4h—5h		−4°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
7·5	13	1·1	5·2	K	7·4	24	48·3	41·6	B	9·8	35	34·4	54·4		9·3	49	33·5	37·0		10	58	53·8	53·0	
9·5		8·2	35·4		8·9		59·9	20·1	B	8·0		41·3	23·7	B	9·0		36·4	47·8		8·3	59	32·1	41·6	Sj
9·1		34·0	5·6		9·6	25	15·2	22·8		9·0		51·1	58·5		10		54·6	44·0		8·9		32·5	26·1	
9·8		38·1	10·4		8·8	26	21·7	22·2		9·8	36	4·4	50·5		9·4	50	4·4	26·8		5·0		35·8	51·0	K
8·4		43·6	54·2	K	8·0		22·6	17·1	B	9·7		24·0	18·8		10		20·0	49·5		9·5		47·0	46·2	
7·3		48·1	4·1	K	9·0		32·2	23·3		9·8		26·4	45·7		9·2		21·7	15·4		9·5		47·8	22·3	
9·2	14	36·1	12·5		8·3	27	0·4	51·5	K	9·9		31·8	23·0		8·0		37·8	53·1	Sj	9·5		49·7	3·1	
9·3		41·2	36·0		9·7		5·1	56·1		8·4		38·8	34·3	K	8·4	51	19·6	39·0	K	10		51·1	37·3	
9·5		49·7	42·2		9·8		10·3	32·5		9·7	37	9·4	42·2		9·1		26·0	2·8		8·5	0	12·9	24·6	
10	15	3·2	7·9		9·3		21·2	9·4		9·7		17·6	56·1		8·2		26·7	47·2	K	9·5		33·0	42·9	
9·6		6·3	59·5		9·3		23·7	5·0		8·4		23·3	19·5	K	9·9		28·9	32·8		9·8		45·8	55·2	
9·4		42·7	29·8		9·5		38·8	39·6		9·8		52·8	27·5		9·0		39·4	1·5		9·8	1	3·7	6·7	
9·0		48·8	13·2		9·1	28	3·3	34·4		9·8		54·3	13·4		9·8		45·5	1·1		9·0		9·8	17·0	
9·0		53·0	6·0		9·8		15·0	41·2		9·4	38	15·6	41·7		9·5		57·4	30·9		8·5		11·7	1·8	
9·7	16	9·5	54·1		8·3		15·7	55·7	K	8·2		49·0	21·2		8·5	52	6·7	48·8	K	9·0		21·9	35·8	Sj
9·6		25·2	53·6		9·5		28·9	13·2		10		54·6	46·1		8·1		13·3	24·9	L	6·2		32·8	39·1	Sj
8·0		25·2	27·5	K	9·1		29·1	39·1		10		57·8	29·8		9·5		33·4	33·4		9·6		43·1	40·8	
5·5		27·1	5·3	K	9·1	29	4·0	9·2		9·4	39	22·5	52·4		8·7		36·6	35·1	L	9·5	2	4·9	37·6	
8·9		50·7	21·0		8·2		11·8	39·8		8·8		27·5	52·6		9·2		38·8	55·8		8·8		23·7	6·6	K
9·3		59·6	8·8		10		31·6	3·5		8·3		28·0	44·5		9·4	53	15·5	9·2		9·3		55·8	21·4	
9·0		59·6	33·2		9·2		39·7	23·1		10	40	22·9	29·2		9·3		26·2	52·5		7·5		56·7	2·2	K
9·4	17	8·5	16·2		9·4	30	5·4	17·9		9·4		38·0	27·2		8·8		39·1	40·0	K	9·5	3	45·8	12·0	
10		23·9	57·1		9·4		17·5	9·2		9·5		38·3	16·5		9·2		44·9	11·4		9·4		57·8	21·8	Sj
9·5		24·4	14·5		9·8		24·6	5·1		9·4		42·4	25·9		9·5		52·7	44·5		9·5	4	37·9	28·5	
9·3	18	0·0	32·1		8·8		32·8	30·1		9·3		49·5	42·9		9·1		53·8	21·5		10	5	7·0	48·2	
9·8		7·2	48·4		9·1		46·0	35·0		9·2	41	14·8	57·6		9·8		55·0	53·1		9·5		17·0	49·0	
8·0		12·5	6·4	K	9·8		46·1	44·2		9·4		50·7	36·3		9·5		58·5	41·2		9·5		17·8	20·9	
9·5		22·7	50·6		9·1		49·3	47·1		9·8	42	8·3	23·6		9·8	54	1·9	27·9		9·0		28·0	50·8	Sj
9·5		56·7	25·3		8·3	31	17·8	28·0	K	8·2		9·0	2·5	K	8·9		21·0	3·7		10		38·9	36·1	
10	19	2·0	58·8		9·4		24·1	3·1		9·7		17·4	56·7		9·6		22·5	0·4		10		48·7	1·7	
8·0		25·6	5·4	K	9·7		28·6	29·1		9·3		38·4	31·9		9·4		38·7	50·9		9·5	6	2·9	34·3	
10		29·7	41·6		9·8		32·4	25·2		9·4		38·6	45·2		9·8		39·4	10·8		9·8		14·9	14·6	
10		40·5	37·7		9·3		35·7	12·1		9·5	43	13·2	45·3		10		53·8	22·2		8·0		18·0	49·9	K
9·5		41·7	28·5		9·2		56·2	22·8		7·3		15·5	7·0	K	9·8		58·5	3·9		9·2		26·8	10·6	
9·4		55·1	8·9		8·5		59·1	59·2	K	8·4		25·7	22·4		9·3	55	8·9	13·1		9·4		56·5	58·8	
9·7		56·4	9·1		9·2	32	20·1	6·2		9·9		34·3	38·2		9·5		15·5	4·4		9·5	7	8·9	31·2	
10		56·4	6·7		9·5		37·4	27·0		10		34·6	41·3		10		27·9	43·5		8·5		27·8	9·8	K
9·4	20	15·9	27·5		8·7		40·0	23·2	B	9·8	44	12·3	26·7		9·5		29·3	49·3		9·4		29·7	0·3	
9·0		16·3	43·6		9·1		40·7	8·0		9·8		21·1	35·6		6·0		33·8	25·2	Sj	9·0		42·0	48·1	
10		21·6	27·3		9·5		50·0	1·3		9·7		35·5	15·3		9·3		34·9	1·3		9·5		46·7	3·0	
9·6		34·2	12·9		9·3		50·5	10·9		9·7		56·6	42·5		9·6		41·1	2·2		9·1	8	5·4	5·2	
9·8		54·5	54·6		9·1	33	4·1	36·8		9·1	45	6·9	13·4		9·8		44·7	18·6		9·5		22·3	13·0	
9·0		57·1	0·9		9·8		4·3	21·2		9·8		42·2	59·5		9·8	56	17·6	31·7		9·9		28·3	10·1	
8·5	21	2·2	45·9	B	9·8		7·2	13·3		9·3		48·1	45·2		9·6		21·2	18·8		7·3		35·3	58·2	Sj
10		28·7	23·8		9·5		17·2	22·1		9·8	46	2·7	47·8		8·5		31·4	25·0	Sj	9·2		55·9	37·7	K
8·9		44·0	56·4	K	10		23·1	14·3		8·4		10·9	3·8	K	9·4		34·5	29·4		9·5	9	3·8	22·6	
9·7		52·4	8·5		9·8		26·2	13·8		9·7		39·7	8·4		10		41·9	10·9		9·5		37·8	16·3	
9·8		53·5	55·3		9·4		42·0	29·8		9·6		46·2	49·3		9·2		54·0	3·0		10		55·9	37·3	
9·6	22	3·5	1·6		9·8		44·1	45·1		10		50·3	26·6		9·4	57	16·9	0·1		9·4	10	7·7	6·5	
8·0		11·8	31·6	K	9·3		54·7	18·1		9·5	47	6·7	46·3		9·8		26·0	17·4		8·7		26·1	53·8	
8·0		33·0	55·0	K	9·3	34	3·9	46·2		9·4		7·9	1·5		9·1		39·4	3·4		9·2		41·0	37·3	
8·8		34·8	17·6	B	9·7		12·2	11·8		9·1		13·1	17·8		8·9		45·0	7·5	L	9·4		43·8	16·8	
9·5		54·5	55·8		9·0		39·2	9·5		9·0	48	2·9	5·9		9·7		53·5	10·6		9·0		45·0	39·6	
9·3		54·7	48·0		9·4		49·3	2·1		9·0		5·2	34·8		10		57·2	43·4		9·8		45·1	59·6	
9·8	23	13·9	27·1		9·8		53·8	36·8		9·6		15·3	18·8		9·0		57·9	53·0		9·0		59·9	35·9	K
9·5		28·3	43·5		9·4	35	3·4	40·8		9·4		19·4	54·0		9·8	58	3·6	14·0		9·3	11	3·9	26·5	
9·4		35·2	45·7		9·8		8·3	18·2		9·7		24·9	4·6		9·2		8·7	16·7		9·3		16·0	46·6	
9·8	24	24·2	2·6		9·3		20·7	34·1		8·0		50·8	8·6	K	9·1		23·5	31·8		9·5		20·6	58·6	
9·1		33·0	54·1	K	9·2		24·2	17·7		9·5		59·5	34·9		9·8		31·0	3·5		9·0		21·0	46·6	
9·3		40·1	2·0		9·4		32·3	20·4		9·8	49	14·7	19·4		10		37·0	10·6		9·5		46·1	51·9	

1101—1160				1161—1220				1221—1280				1281—1340				1341—1400			
m	5h m s	−4° ′		m	5h m s	−4° ′		m	5h m s	−4° ′		m	5h m s	−4° ′		m	5h−6h m s	−4° ′	
9.1	12 4.6	58.5		9.0	25 4.0	24.7		9.2	35 30.9	54.6		7.0	47 22.9	5.8	K	9.5	55 57.9	3.2	
8.5	19.9	29.6	K	8.8	5.0	37.3		9.5	32.9	8.3		9.5	34.9	5.4		9.5	56 5.3	54.1	
10	54.7	58.6		9.0	16.5	41.5		8.5	36.1	43.1	K	10	35.7	34.5		9.5	30.2	39.9	
9.0	13 6.1	39.4		8.0	46.9	40.4	L	9.2	49.9	54.5		9.5	36.0	11.2		9.3	52.3	54.7	
8.5	12.7	56.8	K	9.0	26 4.1	44.3	L	9.9	54.7	58.4		9.3	48 4.0	14.2		10	57 13.0	39.5	
9.5	25.8	3.6		9.0	6.9	27.9		9.4	36 48.0	34.8		8.4	5.9	4.9	K	9.6	19.6	33.7	
10	15 3.0	28.2		7.5	27 14.2	55.0	K	8.0	52.0	37.9	Sj	9.0	15.2	37.9	K	9.7	24.0	26.1	
10	15.0	30.8		9.0	15.0	27.8	K	9.5	37 8.1	55.6		7.8	16.7	51.2	Sj	9.8	35.3	50.6	
9.5	53.0	24.1		9.5	18.1	39.9		9.9	14.7	3.3		6.0	19.2	38.4	K	10	46.0	47.5	
9.2	16 9.8	3.6	K	10	19.0	30.5		10	18.2	5.4		9.7	21.5	56.4		10	58 17.5	47.4	
9.3	10.9	42.8		8.0	22.0	35.4	K	7.5	23.1	45.8	K	7.0	25.7	49.0	Sj	8.8	18.2	35.7	
10	38.7	41.1		8.0	31.0	29.6	S	9.5	54.0	27.9		8.9	37.9	6.6	K	8.8	26.3	46.9	K
8.4	40.7	42.3	K	7.0	41.9	12.2		9.0	38 3.9	17.6	K	9.5	46.5	13.8		9.2	26.7	19.7	K
9.5	17 1.9	9.0		9.5	44.0	26.5		9.5	29.2	59.1		9.8	50.7	48.1		9.5	36.1	26.2	
9.5	18.9	21.5		9.3	46.1	51.5	Sj	6.5	50.9	19.8	K	10	49 11.1	32.1		9.4	41.8	25.4	
9.0	42.7	42.0		8.5	47.0	26.9		8.5	59.8	4.6	K	9.5	14.1	23.2		9.0	51.2	33.6	
9.7	43.0	30.8		9.5	49.1	38.1		8.8	39 13.8	4.2	Sj	9.5	27.9	0.8		9.2	52.2	44.3	
9.5	18 11.1	59.2		9.0	53.0	28.2		9.0	40 7.0	31.8		9.5	32.8	56.3		9.5	57.0	14.3	
9.0	16.2	51.3	K	8.0	56.2	49.6	Sj	9.5	9.9	11.7		9.4	50 6.2	44.0		9.5	59 2.2	42.4	
9.2	19.7	43.9		9.0	28 3.1	42.5		10	30.8	5.0		9.3	13.9	0.7		9.0	4.2	45.2	K
9.0	20.8	0.8	K	9.5	4.2	57.7		9.4	52.2	59.8		9.5	17.3	53.8		10	15.0	9.8	
9.0	29.8	6.2	K	9.2	8.1	47.9		9.5	58.0	29.1		10	26.0	13.0		6.0	28.0	10.7	K
9.1	48.2	56.1		7.0	9.0	35.8	K	9.0	41 3.2	51.8		9.7	36.0	36.8		9.5	40.2	48.2	
9.4	19 10.1	49.9		7.0	11.0	30.9	K	6.5	22.9	8.6	Sj	9.5	44.8	58.9		9.0	47.2	48.7	Sj
9.3	18.9	17.3		4.5	13.6	56.6	L	9.4	48.3	55.6		8.5	51.2	47.1	L	9.3	57.1	34.9	
9.0	22.1	46.3		7.0	19.1	28.2	K	10	53.0	28.2		9.0	53.0	17.2	K	9.5	0 7.0	32.2	
9.5	22.2	55.6		8.7	23.6	55.5	L	9.5	42 12.2	53.2		9.3	54.9	0.7		9.5	9.2	51.2	
9.0	27.0	22.6	K	6.0	31.1	57.5	Sj	9.5	23.8	39.9		9.1	51 0.2	39.1		9.0	13.2	33.5	
9.3	29.9	18.2		9.5	53.1	51.4		9.7	25.5	29.6		9.8	4.8	13.5		9.0	22.0	7.1	K
9.3	30.9	19.5		7.8	55.0	30.9	K	9.5	27.9	16.2		7.0	10.2	39.5	Sj	9.7	35.2	48.2	
9.0	32.9	11.1	K	10	29 40.8	31.8		8.5	29.1	30.4	Sj	10	27.1	30.6		9.7	1 16.7	49.5	
8.6	47.0	25.8	K	10	30 6.5	3.2		10	44.0	38.4		9.5	46.1	22.1		9.5	24.2	39.7	
9.0	20 5.1	34.4	K	9.7	12.1	46.5		10	54.8	40.0		9.5	53.0	11.4		9.0	28.9	4.9	
9.0	10.0	24.4	K	9.4	29.5	1.8		9.5	58.9	14.0		9.5	58.1	27.0		9.0	36.0	12.0	
9.3	31.8	7.9		10	31.9	25.9		9.5	43 15.1	42.5		9.0	52 2.2	46.6	Sj	9.5	43.2	37.9	
9.5	47.9	16.9		7.0	43.2	54.0	K	9.4	21.8	55.3		8.8	4.1	22.5	K	9.2	55.9	3.0	
9.7	57.1	40.1		9.6	48.4	58.9		9.3	24.1	34.8		9.3	9.7	39.9		9.0	2 12.9	4.4	Sj
9.4	21 3.0	28.0		7.5	31 3.9	11.1	K	8.8	52.7	57.3	K	9.0	24.0	21.2		9.5	38.7	52.0	
10	13.4	13.7		9.5	14.8	6.7		9.2	59.1	37.9		9.8	37.2	40.5		9.0	42.1	31.9	K
9.5	14.5	19.0		9.2	29.1	46.5		9.5	44 26.2	28.0		9.7	51.8	56.6		9.0	50.1	18.6	K
7.5	25.2	49.4	Sj	9.0	37.7	21.7		9.8	42.3	55.3		9.5	56.2	44.9		9.0	55.0	11.0	
9.2	25.2	19.5		10	47.2	17.0		10	43.2	33.2		9.8	53 16.4	3.8		9.5	58.0	7.9	
9.3	26.4	18.1		8.8	32 7.1	46.5	Sj	9.5	47.9	13.9		9.5	25.3	54.2		8.5	3 2.2	40.0	
9.4	48.9	49.3		9.0	12.2	51.4	K	9.5	45 1.9	13.9		9.5	28.1	24.7		9.5	5.3	56.4	
10	51.0	47.9		9.7	12.8	7.2		9.5	5.2	49.6		9.7	34.8	57.1		9.5	8.2	44.9	
var	51.1	48.5	Sj	9.5	43.1	48.6		10	24.0	23.2		10	43.8	57.4		9.5	34.1	31.9	
9.1	22 4.4	56.2		9.3	56.1	37.9		9.5	38.4	33.1		9.4	54 0.2	49.7		10	36.1	27.1	
9.5	5.1	41.8		9.5	33 4.1	49.1		9.6	46.5	39.9		9.4	16.2	49.7		9.5	40.1	33.4	
9.5	41.8	4.8		9.7	6.8	28.4		9.6	49.3	21.9		9.4	20.2	48.4		9.5	4 0.1	24.4	
9.5	52.1	49.0		8.2	14.0	30.4	K	9.4	51.4	29.6		10	25.9	4.6		9.5	9.9	5.2	
10	23 24.2	52.6		9.4	18.8	26.4		9.5	46 16.2	58.8		10	48.1	30.0		9.1	17.9	57.9	K
8.0	41.0	22.2	K	9.2	27.8	0.9		9.8	17.6	40.7		9.0	50.5	22.5		9.8	26.6	53.0	
9.1	51.1	42.7	Sj	9.5	38.1	48.7		10	24.1	46.3		9.8	54.3	8.7		6.5	33.2	38.0	K
9.2	51.9	3.3		9.5	34 14.0	27.6		9.4	31.4	32.2		9.8	59.4	13.2		9.5	36.0	42.1	
8.7	56.6	56.0	K	9.5	16.0	28.5		9.8	35.1	46.3		9.4	55 21.1	32.3		9.7	38.3	54.3	
9.2	24 10.4	2.7		9.5	18.8	4.9		8.6	55.8	59.3	K	9.0	28.0	15.3	K	9.5	48.0	15.0	
9.5	33.0	23.4		9.3	21.1	51.3	K	9.5	47 0.0	4.9		10	29.4	56.9		9.1	49.5	50.4	
9.5	43.0	23.4		9.5	44.0	32.6		9.4	0.8	56.4		9.2	45.9	0.2		9.5	52.2	40.0	
9.7	47.8	4.6		9.5	52.1	41.5		9.5	3.0	21.4		9.4	47.1	35.0		9.5	5 7.5	45.4	
9.0	25 2.9	16.7	K	9.5	35 26.0	30.7		9.0	14.1	45.9		9.7	55.9	55.1		9.3	31.3	8.3	

1401—1460				1461—1520				1521—1580				1581—1640				1641—1700			
	6h		−4°		6h		−4°		6h		−4°		6h		−4°		6h		−4°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.2	5	34.3	14.6	9.0	13	15.3	11.7	10	20	35.6	15.5	9.0	29	16.3	51.3	8.7	37	10.8	27.6	K
9.0		35.2	1.7	9.5		18.5	25.1	8.5		38.1	44.4	9.5		16.3	35.9	9.0		23.0	20.7	
9.0		41.3	12.0	9.5		19.0	51.4	8.3		38.5	51.0	K 9.5		28.6	54.7	9.4		24.9	41.5	
9.5		46.3	9.3	9.8		25.8	26.0	8.6		42.2	16.9	K 9.5		33.0	14.3	8.8		33.9	15.2	Sj
7.0		53.5	53.8	Sj 10		29.9	16.6	9.7		42.6	41.2	9.1		46.9	43.8	K 9.5		51.6	16.5	
10		58.4	36.9	10		32.1	19.2	5.4		48.3	40.1	K 9.1		47.4	19.2	9.8	38	8.6	56.3	
7.7	6	4.2	58.3	K 7.3		39.7	31.5	L 8.8		49.7	56.2	K 9.4	30	1.7	30.8	9.5		14.0	35.4	
9.5		10.7	29.1	9.3		45.0	57.0	8.9		50.2	42.7	9.5		11.0	51.5	9.5		31.2	45.9	
9.5		20.2	3.0	9.2		57.0	58.5	9.3		56.4	39.9	9.5		21.8	9.9	9.7		41.6	18.3	
8.4		21.6	33.9	8.0	14	0.6	16.9	L 8.4	21	1.3	48.6	9.0		36.7	16.1	9.7	39	4.5	55.7	
9.1		25.3	11.8	9.4		40.6	27.7	9.4		2.3	26.5	9.1		37.6	54.2	Sj 9.7		13.8	3.5	
9.3		37.6	54.4	9.8		43.2	29.7	9.7		4.9	31.1	9.3		42.9	17.2	9.3		17.5	16.6	
9.6		38.8	33.1	9.1		48.0	21.7	K 9.6		7.6	22.3	9.0	31	1.8	34.6	10		32.1	4.7	
9.8		44.8	35.2	9.5		52.5	21.9	9.0		11.6	22.1	R 9.8		7.2	59.5	10		39.5	14.7	
9.1		46.8	13.6	9.6		57.9	5.2	8.9		14.4	56.7	K 9.0		12.0	8.0	K 10		39.6	55.7	
9.5		57.4	54.4	8.0	15	0.4	41.5	Sj 8.5		23.0	29.2	Sj 9.0		19.0	48.3	9.5		56.8	4.4	
9.4	7	2.7	15.1	9.5		20.1	22.8	9.1		36.7	15.0	8.5		24.8	10.0	K 9.5		58.8	48.8	
9.5		3.2	58.5	9.7		21.5	6.0	9.5	22	9.6	25.2	9.8	32	2.4	56.8	9.4		59.4	32.7	
9.5		3.5	52.0	8.6		23.4	47.3	K 9.8		13.0	3.1	9.8		2.9	14.7	9.3	40	35.3	46.1	
9.1		13.2	54.7	8.7		40.1	53.7	K 9.6		40.1	26.7	9.8		6.9	38.4	9.6		40.3	46.1	
6.0		26.2	31.7	L 8.5		47.5	7.1	9.7		43.5	41.0	9.2		7.2	9.7	10		43.4	35.9	
7.5		33.0	24.4	9.5		51.4	31.9	9.4		47.1	12.8	9.8		8.5	6.0	9.9		45.4	36.1	
8.5		33.9	7.1	9.5	16	9.6	52.1	9.8		48.1	15.0	9.7		22.0	12.1	9.9		47.6	33.0	
9.8		52.4	8.4	7.0		12.8	36.8	K 9.4		49.8	33.2	9.0		27.6	26.5	8.0		48.4	5.8	K
9.5		55.6	20.4	9.7		21.7	56.6	9.2		59.2	10.1	9.5		29.3	23.6	7.9		49.0	59.6	K
8.8		56.2	34.3	9.5		25.3	54.4	8.3	23	17.8	35.7	L 9.5		30.2	28.2	9.1		50.3	2.0	
9.2	8	1.7	34.0	9.5		34.4	9.0	9.0		26.1	39.2	8.5		51.5	34.2	8.1	41	13.4	32.7	Sj
9.8		4.3	47.7	9.5		35.7	30.7	9.3		43.0	7.8	9.5		57.0	18.1	8.5		14.5	13.6	K
9.5		16.3	2.1	9.8		40.7	34.5	9.0		46.8	11.6	9.0		57.4	28.4	8.8		16.1	39.8	K
9.7		20.0	46.7	8.5		43.6	39.0	Sj 9.5	24	2.4	39.0	7.7	33	4.4	19.8	L 10		19.1	26.9	
6.6		21.2	51.9	Sj 9.2		45.5	44.1	K 9.0		9.9	10.6	9.0		6.5	34.9	9.0		19.7	44.1	
9.6		29.8	51.7	9.8	17	10.6	13.2	9.1		10.0	56.8	10		12.9	56.8	9.3		21.1	29.3	
9.8		43.2	10.1	9.8		19.4	33.4	9.5		22.1	28.9	9.2		13.9	51.8	9.5		24.5	54.5	
9.6		44.4	56.4	9.0		21.4	23.0	9.0		36.3	7.6	9.8		16.9	12.5	9.5		35.4	1.0	
9.0		57.1	26.8	10		34.2	53.0	9.6		42.1	6.9	9.2		30.7	28.2	9.5		47.5	26.0	
9.5		57.6	28.3	9.7		41.3	50.9	9.5	25	14.2	34.7	8.8		45.1	26.1	8.7		48.0	31.6	K
9.5	9	5.5	20.0	9.5		50.9	35.3	9.7		30.5	12.9	9.5	34	14.6	27.9	9.5		48.9	52.5	
9.8		21.8	41.7	8.9		54.6	21.6	Sj 8.8		31.2	20.1	9.5		30.7	44.4	9.0		54.0	19.7	
9.8		30.6	24.7	9.2		58.0	47.1	9.5		35.4	43.9	9.4		31.7	9.6	9.8	42	41.5	12.3	
9.5		52.5	56.8	9.4	18	6.9	44.5	9.4		43.5	1.9	8.9		51.8	37.8	9.3		43.9	53.2	
9.5	10	0.4	48.4	8.0		29.4	45.0	L 9.5		53.1	59.2	9.5		54.9	23.0	9.5		54.1	23.8	
9.0		3.3	36.6	9.3		35.5	51.9	9.3	26	28.4	45.2	9.6		57.8	0.5	9.5		55.2	35.5	
9.2		20.7	56.6	K 9.2		52.0	20.2	9.8		44.3	42.5	9.6	35	9.1	18.5	9.0	43	5.8	58.9	
9.1		30.9	11.6	8.5		57.7	33.1	9.8		45.3	19.5	9.2		11.2	14.5	9.8		18.9	4.7	
7.2		42.6	19.7	L 9.2	19	3.6	20.8	9.8		50.1	41.6	9.6		18.0	1.2	7.2		31.4	6.2	K
9.8	11	2.7	57.5	9.5		5.7	41.0	8.5		50.7	27.8	K 9.4		32.4	49.8	9.5		40.5	12.9	
9.3		8.2	54.4	9.1		7.1	27.8	8.5		51.4	58.2	K 7.0		36.1	0.2	Sj 9.1		43.7	47.0	
9.0		28.5	51.6	K 9.5		14.1	26.3	8.5		54.4	5.9	9.7		49.9	27.9	8.2		46.6	6.0	K
9.4		28.7	46.5	9.6		22.7	58.1	7.4	27	8.5	47.4	K 9.5		51.3	21.8	9.6		54.7	54.6	
9.3		43.8	54.8	7.0		24.2	30.5	Sj 9.5		35.6	29.7	9.6		52.5	23.8	9.5		55.8	49.5	
9.0		56.4	7.0	9.5		24.8	0.9	8.4		40.5	8.6	K 9.5		56.0	35.3	8.7		57.5	20.0	
9.3	12	7.1	59.8	8.0		48.0	22.5	Sj 9.2		41.8	4.0	9.0		57.4	38.1	K 9.5	44	9.7	44.8	
9.4		23.6	22.8	8.7		48.4	32.8	K 9.5		42.3	53.5	9.8	36	0.9	1.1	9.5		9.9	32.7	Sj
9.7		27.3	39.3	7.2		50.5	16.4	K 8.0		43.3	34.0	K 9.9		3.3	16.0	9.6		16.4	32.9	
9.6		28.2	7.6	9.5		51.9	5.7	9.4	28	0.2	28.3	9.1		17.6	16.9	K 9.4		29.8	1.2	K
10		32.9	51.1	9.1		57.6	27.6	7.3		7.9	40.8	Sj 9.3		27.3	17.5	K 9.5		34.5	24.6	
8.8		35.2	27.2	9.0	20	0.5	41.7	10		16.8	11.7	9.5		29.1	41.6	9.5		45.3	1.4	
9.8		54.0	21.1	9.8		5.8	11.6	9.8		17.7	58.6	9.2		50.2	55.7	9.5		48.7	17.2	
9.3		55.7	12.6	9.6		12.5	51.4	9.2		36.4	43.7	9.6		56.6	28.8	9.5	45	1.4	4.0	
9.1		55.7	17.1	10		25.0	15.7	9.2		55.8	36.4	9.1		57.5	15.1	K 9.3		8.8	37.9	

1610: röthlich

1701—1760				1761—1820				1821—1880				1881—1940				1941—2000			
	6h		—4°		6h		—4°		6h—7h		—4°		7h		—4°		7h		—4°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.5	45	13.1	5.9	9.0	51	51.1	11.8	9.4	59	23.5	15.2	9.8	9	18.6	58.6	9.0	18	11.5	7.5	
9.5		22.3	27.6	9.5	52	3.5	8.5	9.3		26.2	24.5	8.0		24.2	46.8	K	9.3		20.0	4.8	
9.0		23.0	12.1	K	9.0		6.2	25.4	9.8		35.5	49.1	9.3		36.4	33.8		7.4		51.9	15.1	K
9.8		31.6	53.7		9.5		7.8	50.9	9.8		37.2	40.6	9.1		41.9	16.7		9.2		53.0	14.1	K
9.5		35.3	26.7		9.5		10.0	28.6	10		44.1	52.0	8.5		53.5	7.5	K	10		56.3	4.5	
9.2		39.0	36.7	K	9.0		24.9	36.7	9.4		53.3	25.6	8.7	10	2.6	32.4	K	9.6	19	6.5	1.6	
8.8		54.7	34.0	K	9.0		30.4	1.2	9.0	0	3.3	47.6	K	9.5		14.9	31.2		9.0		23.5	8.3	
9.0	46	0.7	24.2		10		37.0	10.3	9.5		33.5	19.2	9.0		22.2	54.7		9.5		25.7	23.2	
10		8.4	3.6		9.0		40.7	25.9	9.4		44.3	59.3	9.5		44.3	19.0		8.1		26.2	2.1	K
9.5		8.5	7.7		9.5		43.9	52.5	7.8		46.3	27.1	K	9.7	11	3.2	42.8		8.5		38.0	55.8	Sj
9.4		15.4	7.7		9.8		54.0	37.5	9.8		56.3	17.8		9.3		3.9	56.0		10		54.1	17.4	
9.8		41.6	33.2		8.8	53	3.7	24.7	K	9.3	1	7.8	47.6		9.5		8.9	48.1		8.4		55.8	40.5	Sj
8.8		44.0	12.8		10		7.5	13.5		9.2		20.9	57.2		8.7		10.9	3.0	Sj	9.4	20	3.0	24.8	
8.3		45.4	13.2	L	9.0		41.2	45.0		9.5		28.9	58.3		9.5		17.0	6.1		9.2		4.3	45.0	
8.9		45.9	42.8	K	9.1		42.9	18.8		9.8		30.4	4.4		9.5		19.1	19.3		8.6		5.6	3.2	Sj
9.3		51.1	10.4		9.8		45.9	15.2		9.2		34.4	53.5		9.5		19.4	11.0		9.8		15.7	34.3	
9.7		54.7	39.6		9.5		56.8	57.5		9.8		42.1	22.5		9.5		35.9	22.5		9.4		24.2	38.1	
9.0	47	6.4	5.7	K	9.5		58.7	24.9		9.0		59.7	42.1	Sj	9.7		42.9	0.1		8.8		31.0	10.4	K
9.0		8.2	43.9	K	9.0	54	2.9	53.1		9.6	2	5.2	46.0		9.4		45.9	32.2		9.5		58.3	52.8	
9.5		9.1	28.7		9.4		45.3	19.2		5.5	3	1.3	1.0	Sj	8.6		47.3	58.1	K	9.8	21	3.7	3.6	
9.2		22.2	31.8		9.9		46.1	0.9		8.2		13.8	8.9	K	10		55.1	7.1		9.8		32.2	4.5	
9.8		25.5	13.6		9.5		50.7	33.6		8.5		28.8	29.1	K	10	12	10.9	34.2		9.0		38.2	34.7	Sj
9.1		28.6	11.1		9.8	55	5.6	10.5		8.6		46.2	12.9	K	9.8		24.4	23.5		9.5		51.2	0.7	
9.4		32.1	41.4		9.0		12.2	56.3		9.4		50.3	39.1		9.0		26.1	11.3		9.1		52.3	47.8	
9.5		44.2	43.8		8.5		23.3	25.6		7.9		59.9	28.3	K	9.4		29.0	35.6		7.8	22	3.8	14.9	Sj
9.5		58.6	55.8		9.7		31.3	16.9		8.8	4	8.6	40.5	Sj	9.5		29.7	4.9		9.3		15.0	18.0	
9.2	48	7.5	26.5		9.8		36.8	17.8		9.5		17.3	51.6		7.8		46.1	19.3		8.7		23.7	43.5	K
9.6		14.0	44.5		5.0		42.9	2.0	K	10		18.5	57.3		7.3		55.5	43.6	K	9.8		28.8	7.5	
9.5		20.0	27.0		9.8		50.2	9.6		9.5		21.9	33.9		9.3	13	1.0	3.2		9.6		31.3	9.9	
9.8		25.0	51.2		9.0		55.4	33.4		9.2		24.7	41.4		9.4		3.6	19.5		8.5		37.1	54.1	K
8.7		35.3	51.8	Sj	9.4		59.0	7.4		9.0		29.6	49.1		9.1		11.5	54.5		9.4		45.3	54.3	
10		38.0	51.3		9.6	56	0.7	3.1		9.0		30.8	26.1	K	9.0		13.9	40.9	K	9.5		49.2	29.1	
9.4		43.2	15.1		8.3		14.9	3.3	K	9.2		34.2	42.5	K	9.2		17.4	49.4		9.0		51.2	33.3	K
9.4		44.8	30.0		9.0		18.7	36.0		10		48.8	27.1		9.5		29.0	35.6		9.5		56.0	59.6	
9.5		45.7	33.0		9.6		45.6	26.7		9.6	5	3.3	38.2		8.8		38.9	59.6		9.0		58.2	39.4	K
9.2		49.2	56.3	K	9.6		46.6	36.8		9.5		4.0	55.6		9.5		52.0	36.5		8.8	23	0.7	17.1	
9.8		54.9	4.7		8.3		49.7	25.0	K	9.5		11.3	15.2		9.0		52.6	19.0		9.3		19.3	9.2	
10	49	3.6	0.2		9.2	57	4.9	19.0		9.5		18.3	49.9		8.8		55.8	58.1		9.8		35.2	34.4	
9.6		12.9	58.8		9.0		23.6	17.6	K	9.5		40.5	37.5		9.5	14	9.3	21.5		6.9		41.7	55.5	K
9.1		14.1	11.7		9.1		25.5	11.7	K	9.0	6	31.4	8.3		9.0		13.8	15.5	Sj	9.1		48.6	9.7	
9.3		44.4	4.8		9.5		26.8	1.9		9.5		31.9	57.3		9.3		14.4	59.7		9.2		54.7	29.5	
9.8	50	2.4	59.6		9.0		30.2	45.2	K	7.8		34.5	54.8	Sj	9.1		31.9	21.4		9.5	24	5.3	43.0	
9.9		2.9	6.6		9.3		40.0	12.9		9.5		44.5	30.5		9.7	15	11.9	35.0		9.3		8.6	24.4	
9.0		6.5	11.1		9.4		45.6	16.3		9.5		46.7	24.5		9.2		16.0	57.3		8.0		10.2	22.8	
8.5		8.4	0.8	Sj	9.8		45.7	50.7		9.3		51.7	20.8		9.2		33.9	59.8		9.5		26.2	37.9	
9.3		15.2	53.7		9.0		48.5	19.6	K	9.2		58.8	48.4		8.5		37.3	57.0	K	9.0		34.7	3.5	
9.5		18.3	29.0		9.3		50.4	51.6		9.5	7	10.1	42.7		8.8	16	9.4	9.4		9.0		55.2	4.3	
10		49.6	18.7		9.7		51.2	58.8		9.3		11.9	14.1		9.5		17.8	18.9		8.3		59.8	44.1	Sj
9.1		52.2	43.7		9.4		59.8	39.0		9.5		37.0	38.6		9.4		27.5	55.3		9.3	25	3.2	59.4	
8.8	51	2.5	52.7		9.2	58	23.4	20.0	K	9.4		39.5	26.0		8.5		42.9	59.6	Sj	9.5		10.8	57.9	
9.0		8.3	27.7		9.8		36.4	39.3		9.8		54.7	22.2		9.3		49.9	29.2	Sj	9.3		19.6	13.6	
8.0		12.7	20.5	K	10		37.8	34.2		9.1	8	2.1	20.5		9.7	17	11.9	34.3		9.5		28.3	53.1	
9.5		17.7	45.3		9.8		40.5	56.8		8.2		12.3	48.7	K	8.8		16.8	19.9	K	9.8		31.9	4.3	
9.5		25.1	40.4		9.8		44.1	57.0		9.5		17.9	8.1		9.7		20.9	22.7		9.9		33.2	5.1	
9.7		25.2	7.8		9.2		44.9	19.4	K	9.8		19.4	2.5		9.5		21.2	21.6		9.3		40.6	58.3	
8.2		25.5	20.4	K	9.8		45.9	3.5		9.5		28.4	12.6		9.6		28.0	3.3		8.5	26	13.3	6.9	K
9.8		26.2	12.8		9.4		48.2	12.0		9.4		31.3	26.5		9.5		33.0	52.6		9.8		15.5	30.3	
9.5		28.4	9.3		9.4		57.8	48.4		9.2		42.8	11.3		9.4		37.0	35.2		9.5		22.8	54.4	
9.0		36.8	21.7	K	9.5	59	10.5	13.9		9.8		46.5	56.4		8.5		46.9	46.4		9.5		35.2	37.8	
9.3		42.3	29.0		8.7		22.2	43.2	Sj	10		57.4	8.9		9.3	18	5.4	20.1		9.8		36.9	19.5	

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	7h	—4°			7h	—4°			7h	—4°			7h—8h	—4°			8h	—4°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.0	26 48.2	27.8		9.0	36 14.2	58.3		9.4	45 12.8	45.1		9.5	54 52.6	56.8		9.2	3 39.2	38.1	
9.2	51.2	14.9		7.1	20.2	20.3		9.5	26.3	39.8		9.1	54.4	17.7		8.3	43.0	29.4	Sj
9.6	51.4	54.6		6.9	26.8	21.8	L	9.1	30.2	26.3		9.5	57.5	14.7		9.1	4 12.6	36.6	
9.5	27 27.7	1.9		8.6	38.9	15.6		8.5	30.6	20.7		9.5	59.3	25.9		9.6	23.6	45.6	
9.4	34.7	27.2		9.4	42.7	18.5		9.5	36.2	12.9		9.8	55 8.4	0.2		9.2	32.4	53.3	
9.8	35.9	18.8		9.6	48.6	28.5		9.0	52.7	30.0		9.4	15.5	4.4		9.6	34.4	40.9	
9.3	46.3	44.1		8.5	37 3.1	9.8		9.2	46 8.2	25.6		10	32.7	10.1		9.1	53.5	54.6	
9.2	48.7	33.4		9.3	6.0	15.0		9.5	20.3	3.5		9.8	34.9	47.3		9.5	54.2	55.2	
9.2	54.7	30.2		8.0	9.6	43.1	L	9.0	24.3	26.0		9.8	38.3	59.1		9.8	5 6.4	54.8	
8.5	59.8	5.4	Sj	9.2	11.9	20.7		9.3	30.8	44.5		9.1	40.4	10.5		9.7	12.7	49.7	
9.0	28 8.0	18.3	K	9.5	21.6	43.5		9.4	33.8	43.4		9.4	48.9	27.4		9.2	13.8	51.4	
9.5	11.0	12.6		9.7	31.7	28.4		9.1	35.2	19.6		9.5	56 10.5	21.0		9.4	14.8	3.4	
8.9	15.4	52.1	K	9.7	38.0	9.5		8.5	35.7	2.1	K	9.3	13.8	26.3		9.8	23.3	34.9	
9.8	56.3	36.6		9.5	41.9	57.6		9.1	47 7.3	3.6		9.4	32.3	35.1		9.5	36.1	8.2	
9.5	29 19.2	20.6		7.2	59.7	6.5	Sj	8.8	12.4	9.0		9.8	33.3	1.1		9.5	6 13.7	8.4	
9.1	27.4	1.2		9.4	38 2.8	32.0		9.8	31.1	40.6		9.4	51.3	38.8		9.2	26.4	40.4	
9.0	40.5	31.8		8.7	3.9	57.5	Sj	9.8	37.2	55.5		7.5	57.7	25.4	Sj	9.1	34.0	48.4	
9.1	40.7	12.9		9.1	22.3	3.1		9.8	39.2	53.2		10	57 15.9	1.9		9.8	35.5	37.3	
9.4	54.6	16.8		9.4	22.5	15.2		9.8	42.0	42.8		9.3	17.8	35.6		8.2	44.3	13.2	
9.7	30 8.3	49.4		9.4	39 9.8	27.0		9.8	48.9	7.4		9.7	22.4	57.9		9.5	45.1	40.5	
9.7	10.7	57.9		9.5	15.8	34.5		8.0	58.1	11.7	K	8.3	24.4	51.8		9.3	46.9	41.9	
9.1	29.3	40.3		9.8	18.3	1.9		9.3	48 11.3	50.7		9.5	28.9	35.5		9.4	47.2	0.8	
9.5	46.7	18.5		9.5	30.8	56.9		8.3	14.7	17.9	K	9.5	32.8	55.5		9.5	48.7	57.4	
9.8	51.2	1.9		10	36.5	11.1		9.1	22.8	33.5		9.2	37.9	59.3		9.4	48.8	37.3	
9.1	56.8	31.5		9.0	40.2	38.7		9.0	25.7	38.4		9.3	48.7	0.7		9.5	55.0	53.1	
9.5	31 2.3	3.1		9.0	44.3	35.9		9.7	37.5	52.8		9.5	53.6	10.0		9.0	7 20.7	15.7	
8.3	7.0	40.0	Sj	9.5	40 8.9	59.1		9.4	47.3	5.6		9.8	54.9	1.1		9.8	26.6	52.9	
8.0	32.8	39.7	Sj	9.5	18.8	43.2		9.0	47.7	58.4		8.5	58 2.0	7.0	Sj	9.6	31.9	44.6	
9.8	36.9	5.5		9.2	28.0	9.1		9.1	48.1	48.2		9.0	8.9	54.2		9.8	8 1.0	46.2	
9.6	39.9	24.8		9.7	42.5	58.1		9.0	49 33.8	13.6		8.7	22.0	38.3	L	9.1	19.7	8.0	
8.4	42.0	28.0	K	9.5	46.7	19.0		9.1	39.0	14.3		9.5	22.1	21.0		9.6	22.3	35.7	
9.4	32 3.0	36.3		8.5	41 11.2	25.6	K	9.5	39.7	38.0		8.3	28.0	14.9	L	8.8	28.1	32.5	K
9.6	10.2	1.3		9.5	37.6	19.2		9.5	39.9	18.0		9.5	49.5	2.6		9.5	38.3	5.4	
9.8	11.6	17.4		9.8	49.3	2.7		9.3	50 20.2	20.2		8.8	59 4.0	1.9	Sj	10	45.7	10.8	
9.5	16.3	2.2		9.1	49.9	53.6		9.5	28.2	0.4		9.4	8.9	56.1		8.9	55.0	48.6	
10	16.7	16.3		9.0	51.0	40.1		9.5	55.4	11.9		9.1	12.7	24.7		9.3	56.3	10.9	
9.1	19.8	48.4		7.9	59.9	17.8	L	9.4	51 8.4	55.1		9.5	15.8	29.4		9.8	57.9	0.3	
9.5	37.9	30.6		9.1	42 4.8	37.4		8.4	36.1	33.1		8.8	21.0	34.0		9.1	9 0.1	5.1	Sj
9.6	39.2	49.8		9.3	20.0	13.1		8.8	56.8	51.9		9.1	23.8	29.8	Sj	9.8	4.0	45.4	
9.0	43.7	58.2	K	8.9	22.0	13.1		8.5	52 12.0	32.2	K	8.2	25.5	55.2	K	9.1	4.5	34.7	
9.7	45.0	10.8		9.2	23.1	3.4		9.2	13.2	17.6		9.2	42.4	52.6		9.5	6.2	9.4	
8.5	45.5	28.4	K	9.0	46.8	10.8		7.9	29.8	47.9	K	9.5	46.3	28.9		9.8	29.1	51.7	
9.2	33 10.3	12.4		9.2	43 8.9	15.7		9.5	45.3	36.9		9.3	55.2	25.8	K	9.8	40.0	22.2	
9.5	19.9	54.4		8.5	36.3	43.9	K	9.4	48.9	26.0		9.4	57.3	29.1		7.4	46.5	58.5	K
9.0	46.7	27.4		9.2	39.1	43.9		9.1	55.2	20.0		8.7	0 20.5	4.4	Sj	9.0	49.0	51.6	K
9.5	48.5	12.7		9.2	45.0	18.6		7.0	53 16.8	29.6	L	10	39.3	6.4		9.2	51.4	45.4	
9.0	53.8	36.1		9.7	49.9	8.0		9.4	22.8	35.8		10	42.2	13.3		9.2	10 3.3	12.1	
9.3	34 25.2	20.1		9.2	55.1	15.7		8.0	26.7	11.9		9.2	44.3	23.3		7.5	5.4	55.5	K
9.5	31.2	14.4		9.5	44 3.8	41.0		8.3	28.8	43.4	K	8.6	46.6	34.4	K	10	8.4	17.0	
9.5	40.8	45.2		8.9	7.5	49.9		8.0	33.7	7.7		9.4	1 5.8	45.9		10	9.6	5.8	
9.5	43.3	55.9		9.2	7.8	42.5		9.1	34.6	32.9		9.4	17.7	24.6		8.8	17.0	21.9	
9.4	52.3	4.8		10	13.0	10.5		8.5	36.1	40.7	K	9.5	20.2	18.9		9.8	31.2	31.2	
9.4	35 10.8	55.6		9.3	13.7	20.5		7.8	36.8	22.0	L	9.4	28.4	18.2		8.8	11 26.8	43.0	
9.8	15.7	24.7		10	14.8	2.4		8.8	37.3	33.6	K	9.0	47.9	30.4		9.0	30.7	56.4	M
9.5	25.7	25.2	Sj	10	28.5	10.2		8.6	54 2.7	14.5		7.5	2 2.6	7.9	Sj	9.8	36.1	13.6	
9.3	34.1	14.3		9.5	38.0	12.0		8.7	19.3	22.3	Sj	9.3	18.5	6.6		9.8	51.8	32.1	
9.3	56.7	18.4		9.4	41.2	31.4		9.8	21.1	5.4		9.5	20.8	55.4		9.2	12 0.4	15.1	
9.0	36 1.0	38.2	Sj	9.3	41.6	18.0		9.3	26.8	57.1		9.0	37.1	46.4	Sj	9.5	1.5	59.0	
9.5	1.0	31.6		9.5	57.5	0.4		9.8	35.0	7.0		9.1	43.0	11.4		8.5	2.7	5.2	Sj
9.0	5.3	50.1		9.4	45 12.2	13.9		9.5	50.2	23.6		9.5	3 15.3	2.0		9.1	4.6	42.2	

2301—2360

m	8h m	s	−4° ′	
9.8	12	33.6	8.2	
9.1		46.4	41.6	
6.5	13	5.6	52.2	B
9.0		17.1	7.8	
8.3		24.5	21.8	K
8.3		28.9	42.8	K
9.6		39.4	21.4	
9.1		40.0	3.8	
7.8		40.9	24.7	K
8.7	14	2.0	6.5	Sj
9.6		14.5	47.4	
9.5		17.5	4.6	
9.7		29.1	14.5	
10		31.7	57.0	
9.0		54.0	38.8	
10	15	6.3	24.8	
9.8		38.5	47.1	
9.0		49.0	6.6	
9.3		54.6	10.0	
8.9	16	14.9	41.5	
9.8		19.5	47.1	
9.8		41.4	17.0	
9.8		47.6	53.5	
8.8		50.1	18.9	Sj
9.0	17	7.7	3.4	Sj
9.8		11.3	40.5	
9.3		14.8	14.8	
6.5		23.7	15.0	K
8.9		37.5	25.6	
9.4		41.9	22.0	
10	18	7.5	5.3	
9.5		9.0	6.9	
9.4		24.3	34.4	
8.8		45.6	25.4	
9.5		52.5	26.0	
9.5		54.9	11.0	
8.5	19	8.5	13.8	
9.8		22.4	20.9	
9.2		39.1	50.7	
9.3		40.9	44.0	
9.0		41.9	10.3	
9.5		56.7	2.6	Sj
9.3		58.1	45.5	
9.5		59.1	31.2	
9.3	20	0.2	46.5	
9.8		15.0	26.3	
7.5		24.2	40.3	
9.1		26.9	13.0	
10		33.7	56.6	
8.8		37.6	6.5	
10	21	1.0	57.8	
10		18.5	38.6	
9.3		20.9	34.7	
9.2		26.8	24.5	
9.0		28.0	4.6	
10		32.0	39.0	
9.4		34.7	54.0	
9.6		53.0	5.1	
9.8	22	0.6	51.5	
9.8		7.7	51.1	

2361—2420

m	8h m	s	−4° ′	
9.4	22	13.5	37.5	Sj
10		37.2	51.3	
9.5		44.7	51.7	
9.4		48.4	32.1	
9.6		53.0	35.3	
9.9		54.5	38.4	
9.3	23	28.0	4.0	
9.4		29.1	54.6	M
9.5		40.6	42.9	
9.4	24	13.5	49.8	
10		15.0	43.8	
10		26.8	54.3	
9.5		31.9	30.2	
9.8		38.8	6.0	
9.9		43.3	22.8	
8.8		51.5	18.3	
7.5	25	6.4	37.1	K
9.5		56.1	45.9	
7.0		59.0	43.9	L
8.0	26	5.2	49.7	L
10		29.9	24.0	
9.1		38.8	28.0	K
8.3		39.6	0.1	K
10		41.0	15.4	
9.8	27	4.9	11.9	
9.0		22.1	39.6	K
10		36.3	58.8	
10		45.0	1.5	
9.3		54.7	4.7	
9.7	28	5.6	9.7	
9.5		19.1	9.2	
9.8		38.5	4.0	
9.9		41.6	45.8	
9.4		44.7	49.9	
9.8		55.3	25.5	
9.8	29	4.7	59.3	
9.7		35.8	56.7	
9.8		51.2	11.7	
9.8		57.7	37.1	
9.4	30	6.4	27.9	
6.2		13.3	26.4	K
9.2		18.0	4.4	
9.4		21.6	50.0	
10		30.9	12.1	
9.2		53.6	59.3	
9.5		54.7	21.6	
9.0	31	30.8	8.6	K
9.7		54.7	4.1	M
9.5	32	1.5	42.1	
8.0		11.2	21.7	K
8.7		12.7	35.1	K
10		16.8	23.9	
9.4		17.9	50.7	
9.2		51.0	36.4	K
8.5		58.5	14.2	M
9.0	33	14.9	37.1	K
9.3		29.8	27.6	M
10		29.8	17.1	
9.0		40.7	22.3	M
9.1		44.2	16.6	K

2421—2480

m	8h m	s	−4° ′	
7.8	34	4.0	17.6	Sj
9.5		4.4	30.1	
8.8		8.5	3.9	
9.9		29.2	48.0	
8.6		49.2	11.1	K
9.4	35	4.6	13.1	M
8.7		34.5	6.5	K
9.1		44.2	2.5	M
9.5		51.6	55.2	
9.5		52.6	9.5	
9.5	36	9.9	28.1	
10		29.4	31.8	
9.8		33.1	9.5	
9.8		44.5	6.0	
8.5	37	7.9	34.4	
9.5		12.6	48.5	
10		18.0	43.1	
9.3		19.5	46.7	
9.7		27.2	12.6	
9.1		40.4	33.6	
8.8		56.6	13.6	K
9.3	38	0.6	55.0	
10		7.5	17.2	
9.9		28.9	29.8	
9.8		30.9	14.0	
9.8		53.6	14.7	
9.0		58.5	37.8	
9.0	39	8.9	3.0	Sj
10		17.5	43.1	
9.9		25.5	38.9	
9.5		30.0	17.3	
9.5		31.3	15.0	
9.5		56.3	15.5	
9.5	40	13.9	36.9	
10		23.2	59.8	
8.3		38.9	54.2	
9.6		45.6	13.8	
9.2	41	3.7	14.8	
9.5		34.2	14.1	
9.9		46.8	35.5	
7.5		50.7	42.3	K
9.9	42	15.4	8.9	
9.9		21.7	45.5	
9.4		30.1	39.4	M
8.9		37.6	11.9	M
9.5		38.1	4.5	
8.7		52.0	42.4	K
9.1	43	9.6	59.1	K
7.1		22.8	9.6	L
8.8		33.5	51.2	K
8.8		36.4	22.6	M
10		59.0	41.2	
9.7	44	11.6	56.7	
8.1		22.5	7.4	Sj
8.8		25.1	51.6	
9.1		27.3	29.1	K
9.6		28.9	34.0	
9.1		57.0	20.1	
9.4	45	17.5	6.7	
9.3		30.2	20.4	

2481—2540

m	8h m	s	−4° ′	
9.4	45	32.6	49.2	
9.9		37.9	35.4	
9.1		47.0	5.5	
10	46	9.5	13.8	
9.8		21.2	13.0	
10		26.7	15.3	
9.8		42.0	42.5	
9.5		55.5	6.5	
9.0	47	1.4	1.6	
6.0		8.7	53.0	Sj
8.4		18.5	44.7	K
9.8		28.0	4.1	
9.7		31.8	56.1	
9.7		35.0	43.8	
9.5	48	6.9	39.8	
9.5	49	1.3	33.2	
9.9		19.1	51.1	
9.5		30.7	19.4	
8.9		36.2	10.3	K
9.1		41.5	45.1	M
9.1	50	10.2	28.0	
9.6		27.9	25.7	
6.8		44.3	18.2	Sj
9.8		57.6	1.0	
9.4	51	29.6	52.7	
9.8		31.2	25.6	
9.4		35.8	28.8	
8.3	52	16.4	0.4	K
9.5		17.9	42.6	
9.5		18.5	29.4	
9.4		30.5	41.9	
9.0		32.2	13.0	
8.5		35.6	13.5	K
8.7	53	2.7	22.7	Sj
9.8		19.3	41.7	
10		23.3	9.3	
9.5		57.2	29.5	
9.3	54	14.5	6.7	
8.3		45.3	28.2	
9.8		54.2	28.6	
9.1		56.3	30.4	
8.3	55	1.1	53.1	
9.1		9.0	51.9	
9.8		13.1	22.4	
9.2		13.4	1.8	M
8.9		16.0	6.3	M
9.0		22.6	53.4	
10		52.1	2.0	
9.2	56	17.3	34.6	
6.8		29.7	36.0	K
9.0	57	11.2	25.3	K
8.6		21.4	0.9	
8.2		41.9	6.0	L
9.0		46.9	3.1	
9.8		53.0	54.0	
9.3		59.3	29.8	
8.5	58	6.7	6.8	
8.9		12.9	53.9	K
9.8		19.8	24.2	
10		19.9	13.0	

2541—2600

m	8h—9h m	s	−4° ′	
9.5	58	30.2	4.3	
9.9	59	6.3	12.9	
9.5		45.1	21.5	
8.7		46.8	30.0	M
9.5	0	24.6	30.0	
8.3		29.2	40.9	L
9.8	1	25.4	20.8	
10		30.5	55.0	
8.0		32.1	32.2	L
10		33.5	15.4	
8.8		33.9	39.2	L
9.1		38.9	3.4	
9.8		56.1	32.4	
9.1	2	4.2	39.1	Sj
9.4		27.9	14.2	
9.5		38.3	48.4	
9.6		42.8	58.5	
9.8		48.9	32.7	
9.0		49.4	0.8	K
9.1	3	21.8	1.6	M
9.3		27.2	3.2	
9.1	4	11.9	39.1	M
9.5		12.0	22.0	
8.2	5	6.5	7.9	K
7.8		18.7	42.2	Sj
8.5		47.6	35.5	Sj
9.0		56.9	4.6	M
10	6	22.4	57.5	
9.7		25.0	10.9	
10		25.3	28.4	
9.5	7	0.2	43.4	
9.0		13.4	4.6	M
8.0		18.5	53.9	Sj
9.5		49.4	53.5	
9.1	8	10.1	17.3	
8.5		31.2	49.0	Sj
9.5		35.4	6.6	
9.8		40.4	58.3	
8.9		40.9	15.9	
8.5		52.9	15.9	M
9.8	9	3.5	24.4	
9.5		8.1	38.0	
9.8		16.2	41.3	
9.1		18.7	41.8	
9.8		38.4	58.5	
9.0	10	8.7	48.0	Sj
8.7		30.5	57.6	K
9.4		36.7	52.2	
9.9		38.3	54.4	
8.5	11	9.9	17.6	K
9.8		19.6	19.0	
9.5		46.4	2.5	
9.7		56.7	56.2	
8.7		57.4	42.7	Sj
9.2	12	6.7	15.0	
8.2	13	22.9	30.6	K
9.5	14	0.6	12.3	
9.4		11.3	5.0	
9.5		25.5	31.7	
9.8		47.3	54.0	

2601—2660

m	9h m s	—4° ′	
9.5	15 21.9	24.1	
7.5	35.6	25.7	K
8.3	37.4	14.3	Sj
9.4	49.4	24.5	
10	55.3	50.4	
9.1	16 8.0	31.4	
9.4	36.2	46.0	
7.8	40.9	44.5	K
7.5	47.3	50.6	K
8.6	49.4	54.7	K
8.5	50.7	40.8	K
8.8	51.4	24.8	
10	17 2.0	12.7	
9.0	38.5	27.0	K
9.5	18 9.6	52.1	
5.5	9.7	29.9	Sj
9.3	10.0	59.7	
9.4	13.6	6.8	
9.8	15.2	43.0	
9.6	24.0	18.9	
9.2	57.3	20.7	M
8.2	19 7.5	5.6	K
9.4	29.4	33.0	
9.2	34.0	49.9	
9.1	50.9	28.5	M
10	52.1	42.0	
8.2	52.8	7.8	K
8.4	20 11.9	48.5	M
8.7	38.7	51.7	Sj
9.5	44.6	42.0	
10	51.7	13.8	
9.0	56.7	50.4	K
9.5	21 27.0	32.0	
9.3	30.1	56.3	M
9.2	32.2	51.6	M
9.0	37.8	25.0	K
9.5	48.2	44.5	
9.5	55.8	16.7	
9.4	22 23.6	44.7	M
9.9	37.4	7.2	
9.4	23 4.3	22.4	
9.7	16.7	46.9	
9.7	19.3	11.5	
9.3	29.2	19.8	
9.4	30.5	8.7	
9.8	24 0.1	19.7	
10	0.9	15.8	
10	1.0	56.9	
9.5	10.1	21.5	
9.2	14.6	43.9	
9.8	20.9	5.7	
10	27.3	15.7	
8.2	36.4	26.6	L
9.0	48.5	26.8	M
9.4	25 14.6	8.9	
9.1	23.7	15.4	Sj
9.2	26 3.6	42.7	
9.2	21.4	26.9	M
9.2	25.0	32.9	
9.0	47.3	27.4	L

2661—2720

m	9h m s	—4° ′	
10	26 54.3	40.3	
9.0	58.4	57.5	M
10	27 19.8	31.1	
9.2	29.4	31.1	
9.1	34.9	31.1	K
7.5	46.7	14.8	Sj
7.7	52.1	43.7	K
9.5	28 10.4	45.7	
9.4	40.1	48.5	
9.1	41.0	43.9	K
9.2	48.6	46.1	Sj
10	55.0	41.8	
9.1	29 20.8	8.1	
9.8	35.2	56.7	
9.5	39.5	38.2	
9.5	30 0.8	10.9	
9.9	0.9	1.0	
9.1	28.4	4.9	M
10	34.0	40.0	
9.3	47.3	27.3	
8.0	56.4	31.1	Sj
9.5	31 2.5	5.9	
9.1	3.2	39.6	M
9.5	16.9	19.1	
9.9	43.6	46.6	
9.3	57.6	3.8	
9.8	32 5.4	38.6	
9.5	29.0	18.2	
9.4	44.5	48.5	
9.8	46.5	42.0	
9.5	33 32.4	6.7	
9.7	34 8.5	37.2	
9.1	16.7	53.5	
9.4	19.1	47.5	
9.9	28.4	36.9	
9.8	33.3	0.6	
9.5	36.1	17.5	
9.1	35 12.0	43.3	
10	29.2	21.8	
10	36.1	14.8	
9.0	39.6	16.3	K
9.9	36 16.5	52.9	
10	42.8	18.0	
8.7	43.1	10.7	K
9.3	58.0	54.5	
9.8	37 15.9	5.7	
9.7	17.0	17.6	
10	35.6	58.9	
9.4	42.2	24.5	
9.4	52.5	9.3	
9.1	38 8.4	33.7	
10	20.9	3.9	
9.4	26.8	41.4	
9.3	49.5	16.2	
9.2	55.2	22.7	
9.8	39 19.7	24.4	
8.3	28.8	33.3	Sj
9.4	48.1	15.2	
9.5	49.5	9.0	
10	40 13.3	35.8	

2721—2780

m	9h m s	—4° ′	
9.5	40 23.9	15.2	
9.5	28.8	0.9	
9.2	30.1	16.6	
10	39.0	43.8	
9.4	41 6.2	30.2	
9.5	31.6	50.0	
9.5	38.4	8.0	
8.2	48.2	12.0	K
8.6	42 7.5	12.9	K
9.4	38.3	26.4	
9.4	41.5	8.9	
9.2	46.6	48.3	
9.1	49.9	54.7	
9.1	52.1	51.8	Sj
9.7	43 10.0	24.6	
9.5	10.9	6.0	
10	14.3	17.5	
9.6	16.6	58.1	
9.3	23.5	50.3	
9.8	30.4	16.0	
9.1	45.3	18.8	
8.3	44 11.2	17.1	M
10	17.6	56.0	
8.8	21.7	23.7	M
9.2	57.5	51.8	
9.8	45 2.1	7.3	
8.5	26.3	11.0	Sj
9.4	46 6.6	6.2	
10	27.5	18.3	
9.2	53.0	1.3	K
9.5	47 18.7	27.2	
8.6	20.1	23.7	K
8.6	28.5	51.6	K
9.7	38.5	50.0	
9.6	38.9	41.3	
9.8	48 7.6	7.0	
7.3	19.7	17.3	Sj
9.1	26.0	13.8	K
9.1	37.5	3.0	M
10	49 9.2	33.8	
9.4	20.9	41.4	
9.0	28.4	41.2	
9.2	56.3	42.7	
8.5	50 1.1	29.3	L
9.2	12.0	54.3	
9.6	13.3	20.1	
10	24.2	30.4	
9.9	48.3	13.8	
10	51 32.9	49.0	
10	47.3	23.3	
8.9	52 6.4	43.3	K
9.4	29.5	56.2	
9.5	34.3	35.6	
9.2	37.6	57.3	K
7.7	47.0	19.1	L
9.0	51.3	36.2	M
9.2	52.8	54.6	K
9.3	53 1.9	9.8	
10	18.8	48.2	
8.2	54 28.7	26.2	L

2781—2840

m	9h—10h m s	—4° ′	
9.1	55 7.3	36.2	
9.1	18.0	7.0	K
9.8	18.5	54.6	
7.3	40.5	55.3	K
9.5	44.8	56.4	
9.1	56 5.9	16.1	Sj
9.6	43.6	53.4	
9.3	55.2	18.7	
9.2	59.6	15.6	K
9.9	57 13.8	41.3	
8.7	33.0	35.7	Sj
9.9	38.1	21.4	
9.7	58 2.1	4.6	
9.1	11.0	52.8	M
8.9	25.5	56.3	K
10	33.9	46.1	
9.4	37.1	5.8	
9.0	38.9	43.3	Sj
10	59 28.0	54.6	
9.8	37.6	26.7	
10	44.3	37.0	
8.2	49.4	51.5	L
9.3	0 0.6	26.7	K
9.5	38.7	17.5	
9.5	1 54.7	36.9	
9.3	58.5	23.0	M
8.8	2 29.6	18.8	K
9.8	32.5	48.7	
8.0	3 8.0	45.6	K
9.2	12.0	26.3	
10	4 8.6	32.0	
8.7	58.9	20.8	K
9.4	5 30.2	13.5	
9.9	44.8	14.8	
9.6	50.3	46.1	
8.7	56.6	30.4	K
7.0	6 14.0	22.3	K
9.5	16.8	44.2	
7.3	28.9	30.4	K
10	38.6	43.3	
8.6	40.5	13.6	K
9.4	47.5	2.5	
9.9	52.2	2.3	
10	58.4	4.2	
9.5	8 7.7	32.1	
9.6	13.0	12.9	
8.0	43.3	22.3	K
9.6	54.7	30.0	
10	9 5.2	52.9	
8.7	5.5	32.4	K
10	33.6	25.6	
9.9	35.1	22.9	
10	38.2	38.4	
9.8	41.6	40.8	
9.9	54.9	44.9	
10	10 36.7	55.0	
9.9	11 57.4	44.1	
10	12 7.4	47.5	
8.7	8.7	54.6	K
6.5	13.6	22.6	K

2841—2900

m	10h m s	—4° ′	
8.0	12 17.7	30.0	K
9.1	47.3	23.1	M
9.9	54.2	31.6	
10	13 24.7	31.4	
10	26.3	23.3	
7.0	26.7	39.1	B
7.0	48.8	41.2	B
9.3	51.7	31.6	
9.6	14 26.7	34.9	
9.8	32.1	47.6	
10	49.7	32.6	
9.5	15 14.0	49.7	
9.0	21.3	39.7	M
10	34.4	14.8	
9.1	37.6	2.4	K
9.5	48.6	9.7	
9.4	16 26.5	56.4	
9.6	40.3	23.1	
10	41.2	18.4	
9.5	43.1	34.0	
7.3	46.8	11.7	Sj
9.4	17 19.3	47.0	
10	19.6	27.1	
10	25.7	58.3	
10	43.9	15.8	
9.8	18 0.0	54.6	
9.9	43.2	45.1	
9.8	44.3	47.5	
9.4	52.1	5.9	M
9.6	19 6.2	19.2	
9.5	20.0	21.2	
9.4	27.7	20.8	
8.5	41.6	56.2	M
10	56.8	12.7	
10	20 9.3	58.0	
9.8	16.9	37.5	
9.0	35.6	56.2	M
8.9	51.6	4.7	K
10	59.9	45.3	
9.5	21 4.6	4.3	M
10	8.7	34.1	
9.5	10.6	27.7	
9.0	24.2	40.6	K
9.5	26.8	9.8	
9.5	31.3	44.2	
9.9	40.7	35.1	
9.1	49.8	46.6	K
9.2	22 17.0	59.2	M
9.4	24.4	53.3	
9.0	23 23.2	5.9	Sj
9.2	26.7	47.0	
9.0	28.5	18.7	M
9.8	36.3	10.4	
9.1	50.5	18.8	K
9.5	25 5.6	32.1	
9.8	10.5	6.1	
9.6	17.5	14.5	
7.5	55.2	36.7	Sj
10	26 12.2	37.5	
9.8	31.9	49.5	

2901—2960				2961—3020				3021—3080				3081—3140				3141—3200			
	10h		—4°		10h—11h		—4°		11h		—4°		11h		—4°		11h		—4°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
8.9	26	36.6	7.6	WC	9.4	43	40.5	20.1		9.8	3	12.1	19.4		9.1	21	58.7	57.2		10	40	5.7	33.3	
9.7	27	4.1	17.8		9.1		41.1	54.4	M	7.5		47.0	31.9	L	9.1	22	30.2	9.6		9.2		7.0	39.4	
10		40.5	24.7		8.9		51.6	53.4	M	9.7		49.6	11.9		10	23	26.5	36.0		9.4		7.5	21.9	
9.4		58.9	57.9		9.6		56.6	51.3		7.7		54.7	41.0	L	8.5		56.6	27.7	K	8.0		7.6	26.9	K
10		59.5	26.0		9.2	44	18.7	23.1		8.5		57.4	3.5	K	9.4	24	12.7	7.0	K	9.4		26.1	11.0	
7.5	28	6.3	36.8	L	9.7		37.9	56.4		9.5	4	1.1	13.0		9.7		46.7	0.7		9.8		47.9	57.4	
10		15.9	26.0		9.6	45	28.8	7.1		9.5	5	11.4	38.4		8.0	25	0.5	49.3	K	9.5	41	6.2	18.8	
9.6		27.3	2.2		9.0		45.9	46.0	K	7.2		25.2	20.2	K	9.4		5.3	10.6	M	8.5		42.5	58.5	Sj
9.6		48.8	15.3		9.8		47.4	49.2		9.8		34.1	50.9		8.5		8.0	36.0	K	8.0	42	28.2	2.6	K
9.0	29	10.5	4.6	K	9.8		49.5	11.2		8.2	6	3.4	39.5	M	9.7		15.0	18.4		9.6	43	7.8	46.1	
10		32.6	18.2		10	46	4.7	10.2		9.9		15.0	14.6		9.3		26.4	59.6		9.0		31.8	47.8	
9.3		43.7	49.8	M	9.0		14.8	38.0	M	9.7		32.9	17.6		9.0		30.6	29.0	M	6.0		38.0	31.4	K
9.7		52.4	18.8		10	47	18.9	45.8		9.5		58.5	14.2		8.8		42.5	48.2	K	9.8	44	5.8	45.3	
10	30	16.2	57.2		9.8	48	16.8	13.2		9.5	7	0.4	38.6		9.4	26	3.9	57.7		8.9		6.2	5.1	
9.8		53.1	48.9		7.9		23.4	46.9	Sj	10		1.3	29.7		10		38.1	29.0		8.0		25.9	57.0	Sj
9.2		54.5	43.5		9.6		35.1	21.0		9.3		28.5	16.4	M	7.0		58.0	43.5	K	9.6	45	15.7	21.2	
9.3	31	23.8	11.4	K	8.7	49	10.8	1.8	K	9.1		28.5	10.2	K	9.5	27	3.3	57.6		9.8		55.5	42.8	
9.7		38.6	51.0		9.4		23.8	7.2		9.5		49.3	48.0		9.0		17.0	47.3	K	8.8	46	10.9	16.0	
9.8	32	4.4	3.8		10		40.7	26.5		9.3		55.9	49.5		8.2		21.7	8.8	K	10		30.8	57.0	
9.9	33	5.9	7.2		9.5		55.5	52.1		8.5	8	1.0	8.6	K	9.1		27.9	50.8	M	9.6	47	6.5	20.3	
9.0		31.1	47.5	K	9.0	50	18.8	1.5	M	9.3		12.4	1.2		9.7		41.0	55.1		9.3		11.5	37.4	
9.0	34	11.9	2.5	M	9.2		23.2	53.1	K	8.9	9	5.8	12.4	M	9.5	28	13.8	25.1		7.0	48	2.0	19.5	K
9.8		13.6	30.8		9.6		31.9	54.7		9.8		23.7	56.4		8.9		32.7	15.4	M	9.5		12.5	53.8	
9.2		13.0	51.1		10		45.3	15.5		8.7		27.5	21.7	K	9.2	29	3.4	11.4		9.1		26.8	59.2	
9.0		33.4	2.4	K	9.2		53.7	29.0	K	9.0	10	15.0	35.5	M	9.8		10.7	50.2		9.7		58.3	33.0	
9.3		34.6	27.3		9.9		59.9	45.5		10		29.9	32.8		10		43.9	20.6		9.8	49	4.5	19.0	
9.2		44.6	47.6	Sj	9.3	51	19.7	33.2		10		44.8	52.9		9.8		54.9	36.6		10		7.4	46.6	
10	35	5.9	5.1		9.4		29.8	3.9		9.7		52.4	23.9		9.0	30	5.9	59.5		9.0		13.2	24.5	
9.8		13.4	33.4		9.2		57.8	37.7	M	7.2		52.8	16.0	L	10		22.2	51.2		9.1		24.8	14.7	
10		28.0	17.0		9.4		59.1	6.0		9.8	11	13.4	48.2		10		34.5	12.5		9.4	50	9.1	30.6	
9.9		47.5	59.8		10	52	15.9	42.4		9.6	12	16.3	51.7		9.8	31	2.6	8.0		9.0		25.2	22.4	
9.0		50.5	27.1		10		18.7	59.8		9.0		44.4	26.4	K	9.2		53.8	25.2	M	10		36.0	32.9	
9.7		51.9	52.5		8.8		23.2	24.7	K	9.6	13	3.8	5.7		8.5	32	15.6	10.7	K	9.5		36.3	51.2	
9.5	36	4.8	56.0		10		25.3	35.7		9.2		27.1	0.4		8.5		32.7	9.1	K	9.0		43.4	50.7	
10		33.6	47.0		9.9	53	27.6	26.5		9.5		52.5	40.2		10		43.8	50.0		9.4	51	35.9	30.0	
9.0		46.5	47.2	M	8.7		47.5	54.8	K	8.8		59.3	20.7	M	9.8	33	1.2	25.0		10	52	13.2	59.8	
9.3		48.0	43.0		9.9	54	36.1	31.7		7.9	14	24.4	55.4	L	9.4		2.1	1.8	M	9.4		39.7	29.8	
10		49.8	26.7		10		44.8	5.8		8.7		59.5	21.1	K	9.5		7.3	21.0		9.5		40.3	11.5	
9.2	38	24.8	31.2		9.8	55	1.7	16.0		9.4	15	6.6	8.8		9.3		9.2	35.3		9.1		54.8	52.2	
9.6		30.7	58.7		9.8		34.8	40.8		9.2		14.5	29.1	K	8.0		27.7	23.7	Sj	9.5		58.2	59.2	
8.5		53.5	59.9	K	8.6		38.1	11.1	Sj	9.5		28.9	37.6		9.8		55.9	54.1		8.7	53	12.9	18.8	L
9.0		53.7	13.1	M	9.1	56	18.4	0.6	K	9.8		45.0	52.1		10	34	20.0	19.3		9.4		28.7	44.1	
9.9	39	4.8	3.5		10		31.7	38.8		9.1		46.2	32.7	M	10		32.4	56.1		10		32.2	29.0	
9.5		14.0	38.7		9.8		33.1	25.2		10		55.7	4.0		9.8		49.9	38.9		9.4	54	23.2	50.0	
9.3		28.9	15.6		9.3		54.5	23.4		9.0	16	0.0	10.8		9.8		59.9	14.5		9.4		52.0	59.4	
8.0		29.1	37.3	Sj	8.2	57	4.4	36.5	K	9.9		44.2	11.7		9.5	35	5.3	55.0		10		55.8	47.0	
9.3		32.0	16.9		9.5		4.8	55.7		9.7	17	18.0	45.4		9.4		7.3	50.0		9.1		56.9	58.8	
9.5		54.9	30.6		9.8		14.7	9.8		9.7		30.6	20.5		9.8		14.9	18.1		9.5	55	14.1	54.7	
9.5	40	17.4	34.1		9.4		42.1	33.2		9.5	18	35.2	7.5		9.3		38.8	11.4		8.7		33.6	27.8	L
9.9		29.3	5.2		9.5	58	9.8	6.0		9.5		40.9	43.7		9.3		55.2	11.0		9.3		44.7	27.2	
9.7		45.6	10.0		8.7		10.6	37.0	K	9.0	19	1.5	31.3	K	8.3	36	1.4	38.4	Sj	10		49.5	41.9	
7.5	41	49.4	38.4	Sj	9.5		35.7	4.2		9.5		33.2	3.9		8.5		46.3	46.2	M	7.2	56	10.0	40.1	Sj
9.3	42	0.5	44.1		8.5		39.7	36.1	Sj	10		37.7	55.2		9.1		58.7	24.9		10		18.4	35.5	
8.6		0.5	43.2	K	8.8	59	35.4	48.3	K	10		52.4	50.5		10	37	13.2	43.7		9.6		40.9	41.8	
9.0		54.6	53.2	M	9.8	0	12.5	20.6		9.5	20	5.7	15.3		9.8	38	26.6	25.8		9.3		58.4	6.9	
9.5		55.9	7.1		9.5		19.1	32.9		9.1		35.6	51.0	K	9.9		47.9	13.9		9.8		59.7	56.8	
9.1	43	10.0	49.6	M	9.8		21.4	9.5		9.7		37.1	35.6		8.0		57.3	32.4	Sj	9.4	57	4.2	5.6	
9.4		16.7	21.2		9.8	1	45.2	3.7		9.5		40.2	7.5		9.9	39	34.8	27.6		9.8		11.8	19.4	
10		31.3	21.0		9.7	2	32.9	14.8		9.8	21	42.8	58.5		9.5		42.7	25.3		8.7		19.7	57.7	L
9.4		32.9	20.5		9.5		30.5	49.5		9.6		55.1	20.3		8.0		44.8	22.4	L	9.4		29.0	20.1	

3049: 52°88 16′12″3 B_4, Ep. 1873.22

3301—3360

	11h—12h	—4°	
m	m s	′	
9.5	57 36.5	41.7	
9.8	58 1.5	38.0	
8.5	17.2	52.7	L
10	46.3	35.1	
9.8	53.8	49.3	
9.8	56.1	6.2	
8.7	59 32.8	15.4	Sj
9.4	51.0	55.2	
9.4	0 8.0	42.0	
9.8	22.4	8.2	
8.8	28.5	10.9	B
9.4	39.2	22.7	
9.5	44.6	29.4	
9.2	1 8.7	57.0	M
9.8	15.1	1.6	
8.5	33.7	20.6	L
9.4	39.5	13.1	
9.5	42.6	32.8	
6.8	2 22.2	24.8	Sj
9.9	30.9	9.8	
9.8	55.2	25.4	
9.6	3 13.4	6.7	
10	35.4	54.6	
9.8	38.8	21.7	
9.4	51.1	17.9	
9.7	4 21.0	9.7	
9.5	26.0	33.9	
9.4	45.6	29.2	
9.7	5 3.3	15.1	
9.3	8.8	43.1	
9.8	17.2	16.6	
9.5	28.3	44.4	
9.5	6 2.3	44.0	
9.5	8.7	47.1	
6.9	49.6	54.6	K
9.4	49.8	10.0	
9.2	59.9	35.0	
9.8	8 13.1	6.3	
9.0	40.2	22.1	M
9.5	49.2	51.8	
9.4	9 1.1	53.4	
9.5	19.5	32.8	
9.4	23.3	46.3	
9.5	10 3.9	32.0	
9.3	36.7	20.5	
9.5	53.4	52.4	
8.4	57.8	13.0	M
9.6	11 46.5	9.6	
9.7	50.6	20.9	
8.8	58.9	56.8	K
9.4	12 16.7	53.7	
9.4	19.4	33.0	
9.2	24.9	36.3	
9.8	56.7	14.8	
9.5	13 29.3	15.8	
9.4	37.7	49.5	
9.8	44.3	59.9	
9.0	14 12.4	34.6	K
10	52.7	49.8	
9.8	15 7.4	36.8	

3261—3320

	12h	—4°	
m	m s	′	
8.9	15 14.5	30.2	
9.5	15.2	56.9	
9.4	27.3	40.2	
9.8	28.5	34.0	
8.5	29.3	58.4	K
9.0	35.2	47.0	L
9.0	44.3	6.2	M
6.5	47.7	9.7	Sj
10	59.1	22.2	
10	16 1.5	32.7	
9.3	46.0	31.3	
9.4	50.3	17.0	
8.5	17 18.1	50.7	Sj
9.1	49.6	22.1	K
9.0	53.9	24.5	K
8.0	18 23.2	2.9	Sj
9.9	37.3	10.0	
9.4	54.8	8.3	
9.4	55.0	18.7	
9.7	59.7	15.4	
7.8	19 20.1	47.3	Sj
9.4	21.0	52.8	
9.2	32.8	18.2	
9.8	20 8.0	54.8	
9.8	21.1	23.5	
9.7	27.0	28.0	
9.8	51.3	44.1	
9.0	21 5.1	48.0	Sj
9.8	19.3	38.2	
9.5	24.2	59.1	
9.8	26.1	3.4	
9.5	22 45.3	1.9	M
9.3	53.9	33.1	
9.0	23 40.3	31.3	
9.7	45.6	16.9	M
6.3	24 11.5	14.8	K
8.4	30.4	59.3	Sj
9.4	25 12.1	23.7	
9.0	36.0	51.4	M
9.5	26 5.3	8.3	
8.5	21.5	26.4	K
9.4	34.2	46.3	
8.8	34.8	59.9	K
9.5	27 5.8	24.8	
9.8	18.3	23.7	
9.3	24.3	4.0	
8.1	26.0	21.2	Sj
10	35.4	29.4	
9.2	57.9	32.0	
9.6	28 20.2	57.3	
9.5	48.3	11.7	
9.0	29 11.3	37.3	
9.5	49.3	12.3	
9.8	52.2	32.9	
9.4	30 27.6	58.9	
9.7	37.8	47.3	
9.2	52.2	33.5	M
9.5	31 4.2	33.1	
8.5	13.3	31.6	K
10	43.6	14.3	

3321—3380

	12h	—4°	
m	m s	′	
9.0	31 45.3	44.8	
10	50.2	55.4	
9.8	32 0.1	16.6	
10	13.7	13.2	
9.8	33 13.4	8.9	
9.9	23.4	44.4	
9.6	50.0	58.7	
9.8	34 7.0	1.8	
9.5	15.2	53.7	
9.8	22.7	12.8	
8.1	31.3	25.5	K
9.5	35.9	6.0	
9.1	46.4	48.4	K
9.3	35 1.7	39.1	
8.0	8.1	40.0	K
10	22.5	44.5	
9.8	24.2	22.6	
9.8	25.7	32.2	
9.2	29.1	10.1	M
9.1	38.6	56.3	
9.7	49.4	17.6	
9.2	36 0.3	28.5	
9.7	18.1	10.0	
8.6	42.0	10.7	Sj
9.5	47.8	16.0	
9.4	37 10.4	31.1	
9.9	24.3	6.2	
8.8	33.8	28.4	K
9.7	40.0	10.2	
8.7	58.0	19.7	L
7.3	38 3.9	1.1	K
9.1	13.5	51.5	
9.5	40.4	7.3	M
9.8	39 39.6	43.0	
9.5	49.5	57.9	
9.3	40 16.7	29.3	
9.5	28.6	16.2	
9.5	54.3	28.1	
8.5	41 39.6	39.1	K
8.8	42 8.3	20.4	
9.8	43.7	55.3	
9.8	50.9	15.1	
9.5	43 11.5	45.9	
9.8	11.8	24.7	
9.3	19.3	15.3	Sj
9.2	44 25.6	33.7	
9.3	38.4	21.0	
8.5	51.1	35.9	
8.8	57.6	16.0	R
9.2	45 4.3	52.5	
9.5	23.1	35.9	
9.1	27.3	4.4	
8.8	57.1	12.6	Sj
9.6	46 43.1	57.9	
9.2	50.2	33.1	
9.2	47 7.8	29.0	
8.9	48 15.6	15.0	Sj
10	34.2	5.4	
7.2	46.8	4.5	K
8.9	53.6	37.2	

3381—3440

	12h—13h	—4°	
m	m s	′	
9.6	49 28.5	10.2	
9.5	52.0	44.8	
9.8	53.1	34.5	
8.8	50 22.3	31.4	
9.8	28.4	43.9	
9.8	36.1	54.2	
10	51 3.9	55.2	
9.8	17.3	1.6	
9.7	18.5	39.4	
8.0	54.7	7.4	K
9.2	52 17.0	56.8	
9.6	52.8	24.1	
9.3	53 5.7	6.1	
9.5	16.2	59.1	
9.1	29.6	34.8	M
9.8	30.7	2.3	
9.8	54 3.5	11.3	
9.8	12.6	29.4	
9.4	35.5	14.6	
9.9	43.5	14.2	
9.4	48.1	30.1	
9.2	59.9	32.6	M
9.5	55 3.2	1.5	
9.1	6.2	12.1	
8.7	28.5	59.1	K
9.6	38.4	26.0	
10	49.2	11.4	
7.5	56 21.3	22.4	K
9.8	45.0	35.5	
9.5	48.4	56.4	
9.4	57 12.8	48.4	
9.6	25.7	7.3	
9.6	52.7	26.8	
9.0	58 2.2	24.8	K
9.8	16.7	17.9	
9.4	21.5	17.6	
9.9	30.6	32.8	
8.0	34.5	21.3	K
8.4	56.2	3.6	
9.8	58.4	46.3	
9.2	59 5.5	38.2	
9.8	38.7	50.7	
9.5	0 55.0	37.5	
8.8	58.2	10.7	
8.9	1 10.2	0.1	K
9.5	43.5	40.4	
9.8	56.7	5.5	
9.4	2 6.7	56.6	
10	19.4	37.5	
4.3	26.6	45.8	K
9.9	45.8	58.5	
7.6	3 12.9	10.0	K
9.8	49.5	3.1	
9.8	53.3	30.5	
9.6	4 0.4	44.3	
9.7	20.6	33.4	
9.4	35.6	11.9	
9.9	5 13.5	43.3	
8.0	41.6	14.9	K
9.1	42.6	37.2	

3441—3500

	13h	—4°	
m	m s	′	
10	5 50.2	30.1	
9.5	6 28.4	5.9	
10	53.6	37.4	
9.3	55.3	15.0	K
9.3	7 8.0	43.4	
9.3	29.8	28.9	
9.9	43.5	44.0	
9.6	46.5	42.9	
10	56.9	11.9	
9.0	8 4.4	51.8	L
9.3	7.3	27.9	
7.5	32.8	53.9	B
8.0	9 9.6	48.1	L
9.9	10 18.8	37.3	
9.3	21.7	45.6	Sj
9.3	24.6	41.4	
9.3	32.5	4.5	
9.4	45.4	42.4	
9.5	12 6.5	45.0	
9.4	45.8	53.9	
9.6	48.9	26.0	
9.8	51.7	57.6	
9.9	55.8	55.2	
8.4	13 29.8	54.3	Sj
9.3	14 17.4	3.9	
10	15 4.2	11.4	
9.7	17.5	42.1	
9.7	20.0	42.3	
6.0	48.9	9.8	L
8.2	16 25.3	23.8	K
9.6	44.4	2.9	
6.3	17 0.5	24.4	K
7.6	8.9	9.2	
8.7	16.2	29.8	K
10	33.6	56.1	
9.9	45.6	34.1	
10	18 10.3	4.6	
9.9	31.2	41.3	
9.8	19 20.7	26.2	
9.4	20.8	29.9	
9.4	28.5	38.1	
9.4	33.0	13.6	
9.9	36.9	3.4	
9.8	52.7	45.6	
9.0	20 8.1	22.1	K
10	10.4	2.7	
9.0	16.0	12.7	K
9.1	18.8	59.8	
9.5	27.3	8.7	
9.1	30.3	54.7	
10	32.6	37.2	
9.2	53.4	29.4	
10	57.3	10.0	
8.7	22 12.0	9.2	K
9.7	31.2	11.5	
10	39.2	42.6	
9.9	23 21.5	21.2	
10	41.0	53.0	
9.8	24 13.4	11.7	
9.4	24.0	7.0	

3501—3560				3561—3620				3621—3680				3681—3740				3741—3800			
	13h	−4°			13h	−4°			14h	−4°			14h	−4°			14h	−4°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
10	25 21.3	30.4		9.5	40 54.8	27.7		9.3	0 18.9	50.4		9.8	16 33.6	46.0		9.5	35 39.6	47.0	
9.7	28.6	44.4		8.3	58.6	42.4	Sj	9.8	23.1	40.0		9.1	42.5	39.7	Sj	9.4	48.2	35.5	
9.8	36.1	41.3		8.4	41 43.7	54.3	K	8.5	31.2	3.1	K	9.7	17 20.1	51.1		9.8	36 10.4	7.5	
9.3	36.1	13.8		9.5	45.3	48.9		9.4	41.6	59.9		9.2	18 14.0	4.0		8.6	47.4	56.4	Sj
9.6	54.0	54.5		9.6	58.9	55.4		9.6	53.2	5.8	M	9.0	27.4	24.6	K	8.9	51.9	34.1	
8.6	58.7	55.1	L	9.8	42 22.4	6.8		9.4	1 1.2	2.3	M	9.4	56.0	19.8		9.7	37 52.0	32.2	
9.5	26 18.3	28.2		9.0	52.7	46.3		9.8	48.6	26.7		8.8	56.9	49.6	M	9.6	38 41.7	41.1	
8.9	42.6	12.5	K	10	52.8	41.5		8.5	2 17.3	20.5	Sj	9.3	58.5	52.0		9.4	45.0	9.7	
9.5	27 0.0	46.8		9.6	43 10.6	1.4		9.6	20.2	3.1		9.2	19 3.0	4.5		7.3	40 25.3	53.5	Sj
9.4	22.8	30.7		9.9	13.8	59.9		9.5	28.0	48.2		8.6	14.4	30.9	K	9.8	38.5	45.7	
9.3	33.2	54.6		9.2	44.0	8.1	K	9.8	34.0	27.6		9.6	22.8	5.7		9.3	57.2	45.3	
9.3	38.5	6.6		9.8	49.5	51.0		9.8	55.0	18.4		9.1	39.5	51.8	Sj	9.6	41 34.5	22.3	
10	44.9	59.0		9.2	50.8	8.7	K	8.2	57.3	46.5	K	9.3	20 57.0	1.6	M	8.7	42.0	23.8	
8.2	53.4	11.2	K	9.0	44 0.0	3.5	K	10	58.1	40.3		8.9	21 7.0	3.8	M	10	42 8.8	9.9	
6.5	59.3	39.1	K	9.5	6.8	1.8		10	3 7.5	22.4		6.8	13.3	34.1	Sj	9.8	11.1	29.9	
9.7	28 51.5	17.5		9.2	8.7	33.1		9.8	8.2	27.9		8.0	35.3	16.8	K	9.4	19.1	39.9	
10	57.9	14.9		9.0	14.3	57.1		9.7	38.1	53.5		9.4	22 16.9	35.8		9.6	38.1	10.2	
9.7	58.5	18.3		9.8	38.9	52.4		9.0	48.2	3.7	K	9.8	25.7	53.5		9.8	43 18.8	12.6	
9.1	29 37.3	30.5	K	9.4	51.2	29.8		9.5	4 20.1	40.2		9.8	23 39.0	57.3		9.8	21.8	12.6	
9.4	41.2	37.2		8.5	45 2.1	21.0	Sj	8.6	51.0	29.0		9.8	52.8	17.6		9.8	30.5	28.1	
8.2	51.4	3.7	K	9.8	3.9	6.8		9.4	5 35.6	52.7		8.9	24 17.8	7.4	K	9.7	31.7	59.0	
9.9	30 7.1	43.5		9.6	5.5	59.2		9.8	6 1.0	32.6		9.7	53.1	27.3		9.8	44.4	17.9	
9.5	9.6	44.4		9.2	22.5	54.4		8.0	54.6	6.1		9.8	25 23.8	47.1		8.7	44 30.0	9.3	Sj
9.8	55.5	52.8		9.8	43.8	5.9		9.0	56.7	18.2		8.7	32.0	50.1	K	9.5	55.0	34.1	M
9.5	55.8	14.9		9.1	47.7	29.2		8.2	7 3.0	39.1	K	10	39.1	54.0		9.3	45 36.7	53.0	
10	31 9.4	5.0		9.8	46 20.8	56.0		9.6	31.8	58.8		9.6	44.5	46.0		9.8	37.4	28.2	
8.4	42.3	57.2	L	9.8	58.7	26.3		9.2	46.0	30.0	K	9.5	46.7	31.2		9.4	49.6	48.9	
9.5	50.2	33.3		9.6	47 32.3	43.8		9.5	49.5	47.2		8.9	26 14.3	17.7		9.5	46 13.4	22.1	
9.6	50.5	2.2		9.2	48 12.1	33.2		9.2	8 24.1	55.7		9.0	15.4	26.8		9.0	16.9	23.0	Sj
9.8	56.6	33.0		10	23.2	19.0		9.2	28.8	57.2		9.0	26.9	28.8	M	7.3	21.8	58.4	Sj
9.3	32 5.1	15.7	K	9.5	49 0.6	55.0		10	35.4	45.4		9.8	31.0	3.3		9.5	23.6	11.4	
9.8	19.2	39.5		9.0	12.3	8.5		8.8	44.3	45.3		9.4	27 9.0	2.1		8.5	47 1.0	27.8	K
8.0	52.8	30.6	B	9.1	19.1	25.2		9.2	49.7	49.7		7.6	15.0	0.6	K	9.6	24.5	32.7	
9.6	34 4.7	35.4		8.0	50 6.2	46.5	K	9.8	54.9	44.2		9.5	35.6	9.6		9.8	43.7	59.0	
8.7	48.1	56.3	B	9.8	6.2	14.6		9.0	9 10.7	15.0		7.3	28 8.4	38.0	K	9.8	54.2	49.9	
9.1	35 12.8	33.2	K	9.4	51 52.6	26.7		7.0	14.3	57.9	Sj	9.0	36.3	21.8		9.5	48 19.7	20.8	
9.8	32.3	32.4		6.8	53.0	42.6	Sj	8.8	31.5	28.7	WC	10	42.3	50.5		9.5	39.1	50.4	
8.8	36 7.7	52.4	K	8.8	54.1	8.7	K	8.8	33.1	9.7		8.4	45.8	27.8	L	8.6	47.3	1.2	K
9.8	8.0	37.2		9.6	52 51.0	45.0		9.5	42.6	0.6		9.5	58.9	56.0		8.5	49 7.2	32.5	M
7.0	21.6	45.8	K	8.5	53 17.1	30.3	L	9.0	10 16.6	27.6	K	9.3	29 6.0	47.8		9.8	21.3	56.9	
9.8	39.5	28.9		8.5	17.6	12.5	Sj	9.0	22.2	28.2	K	9.4	27.4	35.2		9.5	50 51.0	28.0	
9.0	51.5	56.7		9.4	28.2	4.6		10	36.4	22.3		9.4	43.3	58.3		9.8	58.4	28.9	
8.8	37 8.9	4.2	Sj	9.8	54.1	44.0		10	11 13.3	21.8		9.7	50.4	31.9		6.5	51 19.3	24.1	K
9.8	23.7	34.9		8.3	54 9.6	58.0	K	9.7	51.5	17.3		10	53.9	33.6		9.6	22.2	49.8	
9.8	27.4	1.3		9.5	24.6	45.3		7.6	12 6.0	28.6	K	7.4	30 16.5	54.9	K	9.6	40.2	55.1	
9.2	35.6	34.2		9.3	41.6	37.5		8.8	35.0	11.7		10	17.6	56.4		9.8	52 3.4	15.3	
9.8	38.3	5.3		9.0	54.4	11.6	K	10	53.4	53.3		9.5	35.6	13.6		9.9	5.0	22.0	
9.5	41.3	57.0		9.8	55 17.2	3.6		9.2	13 18.0	18.0		9.8	41.0	10.0		9.8	13.1	7.9	
9.8	43.9	53.0		8.0	28.4	14.8	K	9.6	34.5	52.2		10	31 48.3	48.9		9.7	53 4.3	28.0	
9.2	49.4	0.2		9.9	48.5	35.8		8.0	45.3	32.6	K	9.8	32 17.3	35.3		9.8	36.1	7.5	
9.8	53.9	54.0		9.4	56 4.7	45.0		9.1	46.1	40.1	WC	9.4	33 12.6	12.9		9.7	37.9	38.0	
10	55.5	30.8		9.4	18.6	54.8		9.4	55.5	37.7		9.0	33.8	28.4		9.3	58.0	2.4	
10	38 6.8	2.0		9.0	20.6	13.4	K	9.9	14 8.1	33.9		8.0	40.3	18.8	Sj	9.8	54 12.2	26.4	
9.0	7.9	24.8		6.5	40.6	40.7	B	9.1	33.4	33.4	K	9.8	43.9	13.7		9.6	57.3	8.1	
8.0	46.7	8.8	Sj	10	57 32.0	49.7		9.4	38.6	8.0	M	8.5	34 33.6	13.6	Sj	9.8	55 35.2	2.8	
9.8	39 16.4	56.0		7.8	59 9.4	49.1	Sj	9.2	41.5	38.7	K	8.0	48.5	27.7	K	10	58.0	1.1	
8.5	20.4	43.1		9.1	18.1	56.2		9.3	52.8	44.4		9.8	35 15.1	15.0		9.5	56 10.2	55.6	
9.8	54.3	55.2		8.0	18.3	16.9	K	9.2	15 16.1	2.3	M	9.6	21.0	52.3		9.5	25.9	23.9	
10	58.2	16.2		9.4	45.6	46.1		9.8	22.5	3.7		9.8	30.5	50.8		9.2	28.6	46.7	
8.6	40 23.4	52.3	Sj	9.5	57.6	47.6		9.6	16 2.9	18.6		9.6	36.9	17.7		9.5	45.1	50.5	

3614: goldgelb 3616: 10:26 49′16″1 B_4, Ep. 1872.86 3665: 5:10 28′39″1 B_2, Ep. 1884.37

3801–3860

	14h–15h	−4°	
m	m s	′	
9.7	56 48.9	58.2	
9.3	51.0	47.1	
9.8	57 9.4	27.0	
8.5	52.9	26.4	Sj
9.5	58 3.5	41.1	
9.2	8.7	14.4	
9.8	46.0	42.3	
9.4	51.7	17.6	
9.8	59 2.0	52.5	
9.9	10.4	19.5	
9.5	38.5	57.9	
9.0	59.9	0.3	K
9.8	0 1.9	36.4	
9.4	13.9	29.0	
9.5	16.0	3.9	
9.0	24.1	28.2	Sj
9.3	1 55.8	26.9	
7.0	56.8	50.3	K
9.5	2 10.0	49.7	
9.8	18.8	13.3	
9.6	35.4	27.0	
9.3	51.0	18.1	
9.2	3 10.0	18.9	
9.8	32.0	50.0	
9.4	37.3	16.9	
9.6	38.6	26.1	
9.0	4 5.8	55.4	
8.0	6.8	55.8	Sj
9.8	13.9	42.0	
9.7	5 24.9	35.3	
9.3	26.4	1.1	
8.0	34.5	6.6	K
9.5	6 0.3	21.5	
9.1	1.0	55.4	
9.1	14.9	32.1	
9.8	27.8	27.0	
9.3	38.0	38.0	
9.0	7 10.5	6.5	K
9.2	11.9	0.9	K
6.5	12.7	57.3	K
9.8	16.8	18.4	
9.5	20.9	24.2	
9.5	23.5	52.8	M
9.2	41.5	7.2	
9.9	8 3.3	16.6	
9.2	10.8	30.7	M
7.5	24.9	21.1	B
9.8	39.6	33.3	
10	51.0	41.4	
9.4	54.9	41.4	
9.1	9 2.3	26.4	M
9.8	21.7	9.6	
9.4	29.0	15.5	
9.9	58.0	54.1	
7.5	10 3.9	39.8	B
9.1	28.0	36.0	
8.9	37.0	43.1	K
8.7	11 5.2	59.6	K
8.2	21.9	0.6	K
10	42.9	28.6	

3861–3920

	15h	−4°	
m	m s	′	
9.5	11 45.9	30.3	
9.2	12 13.4	10.7	
9.8	41.0	27.4	
9.2	47.0	7.8	
9.2	55.1	37.3	
6.7	58.9	35.7	Sj
9.5	13 2.2	55.3	
9.1	54.9	43.5	K
9.8	55.3	25.4	
9.2	58.4	29.2	
9.5	14 17.5	41.3	
9.9	22.9	33.2	
9.0	30.1	15.4	Sj
9.5	49.6	0.0	
9.8	15 10.2	10.8	
9.8	36.0	32.2	
9.8	16 9.7	17.5	
9.8	10.9	49.6	
9.4	11.0	1.3	
8.5	42.8	35.3	K
8.9	50.4	43.8	K
9.1	59.9	46.7	K
9.8	17 43.2	17.0	
9.8	18 27.4	42.5	
9.4	58.3	44.5	
9.4	59.0	25.3	
9.0	59.4	13.4	
9.5	19 1.8	41.0	
9.5	49.3	32.7	
9.3	55.2	25.6	
9.6	20 1.9	51.3	
9.8	48.0	14.7	
9.1	21 14.8	36.1	
9.5	23.7	10.1	
8.5	32.2	5.7	K
10	22 19.8	30.8	
10	23.4	46.8	
9.9	48.2	18.5	
8.8	23 21.7	17.2	K
8.5	22.7	11.3	K
8.8	30.9	42.3	
9.5	33.0	56.7	
9.3	36.4	58.2	
10	53.8	36.7	
9.8	24 3.7	12.2	
9.5	11.8	24.4	
9.3	31.8	1.1	
9.9	35.3	31.1	
10	25 12.1	13.3	
10	13.6	29.5	
9.4	28.9	7.6	
9.8	32.5	41.6	
9.2	39.8	17.1	M
8.5	40.8	21.9	Sj
9.3	47.4	7.7	
9.4	58.2	9.0	
9.0	58.3	43.8	
9.8	26 10.9	17.3	
9.0	24.4	41.6	
8.6	35.9	15.1	K

3921–3980

	15h	−4°	
m	m s	′	
9.5	27 3.8	48.9	
9.3	3.9	9.2	K
10	23.3	24.0	
9.0	27.6	38.1	
9.1	52.4	53.7	K
9.2	28 4.8	44.8	K
9.7	13.2	17.8	
9.6	20.3	28.3	
9.8	29 12.4	46.8	
8.5	13.6	8.8	Sj
9.3	13.7	6.8	
9.2	15.3	29.9	K
8.7	19.8	28.3	K
9.1	30 16.2	15.6	
9.8	17.7	25.4	
8.0	19.0	56.4	K
9.4	28.8	26.1	
9.4	57.3	31.9	
9.3	58.2	22.3	
9.8	31 6.4	47.8	
10	34.2	20.8	
9.9	35.6	6.2	
9.9	36.1	42.6	
9.2	32 4.6	33.6	
9.2	25.6	23.5	
9.5	41.4	55.0	
9.4	48.9	6.0	
9.8	52.2	11.2	
9.8	55.8	32.0	
9.6	33 45.9	29.9	
9.4	53.2	25.8	
9.8	34 36.3	45.0	
8.3	53.3	40.4	K
9.8	59.2	28.2	
8.7	35 27.6	56.8	
9.2	38.3	47.2	
9.1	57.8	50.1	
8.9	36 0.9	32.3	K
9.8	22.3	47.6	
8.8	29.2	42.0	K
9.8	41.7	30.2	
9.2	47.8	9.0	
9.1	37 17.8	40.6	Sj
9.8	36.5	28.2	
8.8	38.9	10.6	K
9.9	39.0	46.8	
10	38 8.7	30.6	
9.4	22.9	8.5	
9.3	23.2	59.9	
9.5	25.8	59.1	
9.4	28.2	29.8	
9.9	35.3	14.6	
8.8	39 7.2	35.7	
9.3	12.3	48.0	
8.0	44.2	40.0	M
8.5	40 14.3	52.3	Sj
7.8	33.9	20.0	Sj
10	52.7	40.0	
9.5	55.8	48.0	
9.8	41 11.3	47.3	

3981–4040

	15h	−4°	
m	m s	′	
9.6	41 32.7	42.0	
8.0	39.2	30.5	K
9.8	41.4	8.6	
9.5	57.9	20.7	
9.8	42 3.9	39.3	
9.2	21.7	38.4	
9.8	43 57.3	51.0	
9.5	44 1.1	38.5	
9.5	3.6	12.2	
9.8	22.1	6.2	
9.6	25.0	19.3	
9.2	44.5	16.6	
9.5	52.8	43.2	
9.6	45 55.8	46.7	
8.0	46 3.1	3.0	K
9.0	31.8	47.3	
8.3	49.9	16.2	Sj
8.8	47 21.7	28.1	
9.4	43.0	4.9	
9.1	44.7	2.8	K
9.5	48 32.6	19.3	
9.6	45.3	19.9	
9.8	52.7	43.8	
9.5	49 15.3	19.9	
9.4	19.8	37.3	
9.1	27.2	37.1	
7.8	29.4	58.5	L
9.3	32.7	44.4	
9.0	43.8	54.3	
9.3	50 2.3	58.7	
9.0	18.1	2.3	K
9.1	33.2	45.8	
9.2	48.3	55.0	
9.1	59.6	4.8	K
9.8	51 12.7	46.0	
9.8	25.8	51.9	
8.3	52 4.0	39.6	Sj
9.6	7.6	25.3	
9.1	34.2	46.3	K
8.2	37.7	39.6	K
9.8	53 34.1	7.8	
9.8	39.8	58.8	
10	54 5.3	59.2	
9.5	33.6	6.7	
9.9	47.7	33.5	
8.1	55 10.5	24.5	Sj
9.5	23.6	12.1	
9.8	29.2	47.7	
9.1	33.9	15.9	K
9.7	42.2	51.9	
9.8	51.6	11.6	
8.6	56.2	52.2	K
9.2	56 30.0	2.6	
9.6	40.6	12.8	
9.4	40.8	47.7	
8.8	54.1	49.0	K
9.9	57 8.7	51.8	
8.3	22.6	4.6	Sj
8.9	29.2	44.8	K
9.2	49.2	56.4	

4041–4100

	15h–16h	−4°	
m	m s	′	
9.6	58 0.2	52.5	
7.8	42.8	21.5	Sj
9.0	59 1.0	25.4	
9.6	2.8	49.4	
9.6	12.0	0.2	
9.2	33.5	55.5	
9.2	0 15.1	32.6	
9.8	21.6	24.5	
9.8	47.7	47.3	
9.1	1 22.6	54.5	
9.8	23.5	27.8	
8.0	30.0	4.9	Sj
9.5	48.0	8.7	
8.5	49.2	10.5	K
9.4	2 2.7	55.2	
9.6	24.4	18.2	
9.0	28.0	25.3	Sj
9.2	40.1	40.1	
9.2	45.1	30.9	
9.5	54.0	55.2	
8.7	59.9	21.2	K
9.8	3 9.1	38.5	
9.5	17.6	25.3	
9.5	25.5	9.0	
9.5	4 28.5	16.3	
9.5	58.5	24.1	
9.4	59.0	27.4	
9.1	5 3.1	11.6	
8.9	4.6	46.9	
9.4	14.0	10.0	
9.7	39.5	36.1	
9.5	6 52.7	54.3	
9.5	53.2	18.5	
9.6	7 14.5	1.8	
9.7	25.5	18.8	
9.2	42.8	14.3	
9.4	49.0	3.5	
9.8	50.4	0.1	
9.0	8 4.6	31.7	
9.3	43.2	13.4	
9.5	53.1	47.5	
9.3	9 1.9	40.8	
8.9	2.4	59.2	
10	42.7	48.5	
9.5	10 6.8	49.3	
3.3	38.4	19.8	Sj
9.5	46.6	29.7	
9.0	54.9	11.9	
9.5	11 7.5	32.8	
9.4	21.5	44.2	
9.0	28.1	27.5	
8.5	44.5	47.7	M
9.0	12 25.8	28.4	
8.8	36.4	25.3	K
8.3	36.7	12.3	K
8.9	47.9	35.8	M
8.7	59.4	16.4	Sj
8.8	13 30.0	30.9	K
9.7	14 5.9	30.8	
9.2	18.3	21.7	

4101—4160

	16h		−4°	
m	m	s	′	
8.9	14	58.8	22.5	
9.2	15	26.5	10.5	Sj
8.7		35.3	25.9	M
9.8		44.9	33.5	
9.4	16	37.4	31.3	
9.2	17	14.8	33.9	
9.0		49.1	35.0	
9.5		51.3	50.5	
9.4	18	6.4	10.2	
8.9		37.1	20.9	Sj
9.5	19	12.1	58.3	
9.4		19.3	0.9	
9.0		34.2	43.1	
9.8		35.1	21.6	
9.2		48.1	26.3	
9.9	20	18.3	19.3	
9.1	21	36.0	41.8	
9.2		55.9	58.5	M
9.6	22	10.8	24.6	
9.9		34.9	30.2	
8.8	23	3.7	21.1	
9.4		38.5	56.4	
9.8	24	3.4	19.2	
8.7		35.4	10.9	Sj
9.8		39.7	6.2	
9.1	25	43.0	46.8	
9.5		59.6	35.5	
7.8	26	13.9	44.8	L
9.2		50.4	44.2	M
9.5	27	21.4	59.5	
9.1		30.1	6.4	Sj
9.4	28	4.3	57.1	M
9.0	29	6.5	51.9	
9.5		21.1	11.1	
9.6		26.9	7.8	
9.3	30	11.0	45.7	
9.8		35.4	25.1	
9.4		39.0	43.7	
8.4		47.1	17.9	M
9.1		55.5	34.3	
9.7	31	45.0	13.7	
9.7		56.6	32.1	
8.7	33	15.5	18.7	Sj
9.1		35.2	21.4	
9.4		56.5	36.1	
9.8		59.6	49.6	
9.4	34	42.0	18.2	
9.3	35	52.6	15.6	
9.5		57.7	47.0	
9.4	36	34.2	19.1	
9.5	37	13.7	41.4	
9.5		37.1	27.4	
9.5		39.7	47.6	
9.7	38	19.2	30.9	
9.8		22.2	41.1	
9.3		35.0	1.5	
9.5		35.4	45.7	
9.5		44.7	10.5	
9.5		58.6	6.1	
9.6	39	22.5	19.3	

4161—4220

	16h		−4°	
m	m	s	′	
9.5	39	57.6	13.7	
9.8		58.6	6.3	
9.7	40	45.3	0.6	
9.4		57.8	59.5	
6.9	41	12.5	15.1	Sj
9.0		15.8	59.2	
9.4		16.4	2.7	WC
8.5		17.1	44.0	
8.7		25.7	53.0	WC
8.6		29.6	53.2	K
9.4	42	8.3	26.6	
9.3		18.3	59.2	
9.8		29.8	28.0	
9.4		34.1	59.2	M
10		37.1	5.0	
9.4		50.9	58.2	
10	43	4.0	15.1	
9.4		13.1	45.0	
9.0		38.4	53.7	
9.4		55.0	24.5	
9.8	44	0.0	28.3	
9.6		30.4	16.8	
8.8		32.0	11.5	
9.3		40.7	20.7	
7.3		48.7	53.7	Sj
9.2	45	39.1	40.1	
9.0		39.1	31.2	
9.5		47.5	19.1	
9.4		51.0	35.7	
9.3		51.2	13.5	
6.8	46	6.5	4.4	K
9.8		22.2	52.2	
9.5		29.6	27.3	
7.3		29.8	5.6	K
9.0		53.6	31.5	Sj
9.4	47	10.3	23.5	
9.8		13.1	36.8	
9.5		13.9	51.6	
9.0		15.1	41.1	
9.4		23.0	5.1	
9.4		39.5	44.9	
8.5		56.4	55.9	K
8.7	48	16.1	36.9	Sj
9.1		44.8	55.4	
9.8	50	28.8	9.0	
7.8		39.9	6.8	Sj
9.5		58.0	31.4	
9.3	51	28.3	5.5	
8.9		30.3	23.4	Sj
9.4	52	8.6	39.0	
9.3		12.2	10.3	
8.0		18.1	7.3	K
9.5		31.7	55.8	
9.8	53	5.4	4.9	
5.8		24.5	0.0	Sj
9.0		29.2	52.0	
8.8		39.7	0.2	B
9.4	54	12.5	36.0	
9.6		14.1	37.3	
9.7		25.0	35.3	

4221—4280

	16h—17h		−4°	
m	m	s	′	
8.6	54	42.9	23.5	Sj
9.9	55	11.1	10.4	
9.4		48.5	32.2	
9.2	56	20.1	54.7	
7.5	57	29.1	49.2	Sj
9.3		39.6	51.0	Sj
9.5	58	13.7	56.8	
9.5		53.8	10.5	
9.8	59	3.5	46.1	
9.0		39.5	25.0	WZ
9.7		45.6	47.3	
9.4	0	6.1	43.5	
7.8		22.5	7.5	Sj
9.5		33.0	59.6	
9.8		37.6	46.8	
9.4	1	41.2	52.9	
9.5	2	12.6	55.0	
9.3		33.0	28.3	
8.8		34.8	38.5	K
9.4		38.1	50.0	
9.8		55.0	34.2	
9.5	3	56.4	16.1	
7.3	4	2.8	27.5	Sj
8.7		40.1	13.4	K
8.8	5	7.9	0.5	K
9.8		27.7	26.0	
8.4		36.6	58.3	K
9.2		42.1	51.9	
9.6		54.0	42.1	
9.7	6	16.3	59.3	
9.8		30.8	47.1	
7.4		56.8	18.6	K
9.5	7	18.4	57.6	
9.5		20.3	51.3	
9.8		27.8	34.3	
9.5		52.0	13.6	
9.5	8	24.4	14.4	
7.8	9	39.4	58.4	Sj
9.2		56.2	20.3	
9.6	10	9.3	48.3	
8.9	11	0.0	7.2	K
8.2		17.7	8.8	Sj
9.4		38.4	26.8	
9.7	12	57.9	4.3	
9.4	13	3.7	32.4	
8.8		29.8	40.3	Sj
9.5		38.7	16.7	
9.3		40.5	40.5	
8.5	14	45.0	35.6	K
9.2	15	5.9	4.3	
9.6	17	46.5	57.4	
9.6		48.7	52.3	
9.8	18	48.8	47.9	
9.4		51.6	20.8	
4.8		56.5	56.8	Sj
9.3	19	4.6	44.1	
9.3		6.1	40.5	
9.4		8.1	49.0	
9.3		44.0	56.0	
9.6		48.5	57.0	

4281—4340

	17h		−4°	
m	m	s	′	
9.4	19	51.3	21.8	
9.0		54.0	11.7	Sj
9.8	20	0.1	59.5	
9.3		7.3	10.6	
9.5	21	2.8	37.1	
9.3		41.1	1.2	
9.6		42.2	23.5	
9.2	22	4.8	45.7	
9.0		18.3	41.1	
6.9		39.8	14.7	Sj
9.5	23	2.7	55.1	
9.5		40.6	5.8	
8.7		46.0	47.4	K
9.1	24	47.4	18.4	Sj
9.4	25	5.8	52.8	
8.8		17.8	29.4	M
9.4		19.9	28.7	
9.3		20.9	56.1	
9.4	26	32.7	42.5	
9.4		39.3	8.4	
8.5		40.6	52.9	Sj
9.3		58.9	0.0	
9.4		59.6	55.7	
9.4	27	4.0	22.0	
9.6		10.6	27.9	
9.8		21.1	32.2	
8.0	28	9.7	50.8	
7.5		13.6	5.5	K
9.2		19.4	18.1	
9.5		57.0	20.2	
9.4	29	20.1	25.6	
9.1		21.1	27.3	
9.3		39.1	29.8	
9.5		40.4	31.1	
8.5		51.6	4.4	Sj
9.5	30	3.8	17.6	
9.5		4.5	57.2	
9.7		17.7	58.9	
9.7		24.7	10.5	
9.5		36.0	8.2	
8.5		56.1	33.4	M
9.7	31	15.1	15.4	
9.1		48.1	58.7	
8.3	32	3.2	52.8	K
7.7		5.1	52.8	K
9.7		23.8	16.2	
9.8		49.0	17.7	
9.3		59.1	33.0	
9.8	33	59.1	27.2	
8.8	34	29.1	12.2	K
8.5		42.9	41.2	K
6.5		52.2	46.4	K
9.0	35	2.3	55.0	
9.4		2.4	28.3	
9.4		51.6	28.2	
9.5		51.8	3.9	
9.4		59.0	12.7	
9.7	36	14.3	52.9	
8.8		22.2	29.1	M
9.5	37	2.1	34.5	

4341—4400

	17h		−4°	
m	m	s	′	
9.0	37	13.6	53.0	K
9.5		15.2	41.5	
9.8		36.1	54.1	
9.1		39.4	17.7	
9.3		48.7	17.6	
8.6		55.3	20.3	K
9.3	38	4.2	59.6	
9.4		48.7	49.8	
8.9		51.7	25.3	M
9.7	39	16.1	17.5	
9.0		44.8	59.3	M
10	40	22.1	17.0	
9.2		28.2	29.1	
9.3		36.4	13.6	
9.2	41	29.5	8.8	M
9.4		36.0	42.5	
9.5	42	0.2	25.0	
9.5		22.1	55.8	
9.7	43	24.0	4.7	
8.7		28.8	8.6	M
9.3		49.8	7.8	
9.6		57.3	58.6	
8.0	44	5.4	11.4	K
9.6		13.5	52.1	
7.8		22.0	44.6	R
8.8	45	29.7	15.4	R
9.3		40.7	37.4	
9.5	46	11.7	36.5	
9.6		16.0	14.6	
9.7		18.6	16.1	
7.9		36.0	11.0	K
9.5	47	20.7	20.6	
9.5		24.3	47.4	
7.3	48	34.2	33.0	K
9.5	49	2.6	44.8	
6.3		8.4	3.0	K
9.4		49.8	57.1	
9.5	50	13.3	44.4	
9.2		13.7	35.5	M
9.5		58.8	51.6	
9.5	51	0.6	26.4	
9.6		26.5	12.2	
9.4		55.6	35.5	
5.8		55.6	48.1	Sj
9.7	52	25.4	18.5	
8.8	54	0.3	40.8	Sj
9.2	55	9.7	14.0	
8.5		25.2	23.1	K
9.5	56	8.0	10.1	
9.0	57	0.5	2.9	Sj
9.4		9.1	19.8	
9.7		25.2	10.7	
9.3		25.3	58.2	
7.9	58	1.1	33.3	K
6.0		32.2	45.5	K
9.1		35.9	44.0	K
9.4		38.4	55.1	
9.6	59	12.2	33.5	
9.6		33.3	14.9	
9.5		35.1	57.1	

4225: 29°56 49′17″.4 B_4, Ep. 1871.48

4401—4460				4461—4520				4521—4580				4581—4640				4641—4700			
	17h—18h	—4°			18h	—4°			18h	—4°			18h	—4°			18h—19h	—4°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.4	59 45.6	2.4		9.3	17 26.4	29.8		9.2	30 25.1	20.0		9.4	39 24.1	13.0		9.2	49 18.6	23.7	M
9.8	0 16.1	2.8		7.7	32.6	55.4	K	9.3	29.7	58.5		4.5	28.9	53.8	L	10	33.5	55.1	
7.5	38.3	34.7	Sj	9.4	38.1	37.9		9.8	38.0	51.7		9.0	40 28.4	41.0		9.7	41.7	18.4	
8.4	50.1	6.3	K	9.1	18 3.7	17.3		9.1	44.4	38.3		9.5	28.9	15.1		9.9	45.2	23.5	
8.0	56.5	27.7	K	9.2	12.0	16.7		9.1	51.8	25.5	M	9.1	35.8	22.3	M	9.6	50 7.7	12.6	
7.8	1 7.1	0.6	K	8.0	19.2	59.5	K	9.4	53.3	58.0		9.6	53.6	0.2		9.2	21.6	10.6	M
8.5	40.3	35.8		9.2	19 7.0	20.7		9.4	31 6.4	50.4		8.8	41 5.6	3.3	M	8.2	28.0	20.0	Sj
9.9	48.4	55.0		9.5	38.1	54.5		10	8.3	50.6		9.4	10.1	17.2	M	9.0	31.3	29.4	
9.5	50.8	58.6		9.4	40.5	24.3		9.5	12.3	43.6		9.6	10.8	57.2		9.2	57.4	38.3	
9.2	2 31.9	50.5		8.0	59.3	0.8	Sj	9.4	16.9	58.5		9.8	24.1	11.9		7.4	51 11.6	54.9	K
9.2	56.6	9.5	M	9.4	20 11.0	20.4		8.5	22.5	13.4	M	9.8	28.0	31.8		9.6	34.2	55.9	
9.2	3 54.8	37.3		9.3	22.3	1.4		9.5	25.1	17.4		9.5	51.9	9.8		9.3	38.8	58.1	
9.4	5 13.9	20.0		9.2	31.2	5.6		9.5	32.3	30.7		9.3	42 8.3	29.2		8.6	58.0	10.6	K
7.8	18.5	47.8	K	9.2	44.5	34.3		9.4	54.9	43.4		9.3	15.6	18.1		9.7	58.2	59.7	
6.8	30.1	2.7	K	9.2	21 16.8	21.5		9.6	56.0	19.5		9.4	28.2	16.1		9.3	52 2.8	27.0	
9.8	42.8	33.8		8.8	25.0	31.8	M	8.5	59.8	32.1	Sj	9.5	47.0	37.2		9.5	5.1	53.3	
9.5	47.6	3.7		9.3	22 15.0	18.6		9.0	32 1.1	55.9	Sj	9.4	43 6.0	41.6		8.9	7.3	12.5	K
9.3	52.4	41.8		7.8	15.7	4.5	Sj	9.7	19.2	59.9		9.2	44.9	19.1		8.8	25.1	33.4	Sj
9.2	53.9	16.2		9.4	16.3	34.2		9.4	19.4	58.2		9.3	53.0	15.0		9.5	43.7	3.5	
9.3	6 7.1	16.1		9.8	38.0	29.5		9.8	21.8	42.6		9.5	44 3.5	45.4		8.3	48.4	31.0	Sj
9.5	22.1	1.2		8.8	23 7.6	43.1	K	9.8	31.7	32.2		9.1	13.7	2.0		9.5	53 1.5	48.8	
9.3	7 3.0	54.7		9.8	11.8	53.1		9.8	34.8	20.1		9.7	45 3.3	53.6		9.8	11.3	34.9	
9.0	4.0	43.6	Sj	9.0	12.8	55.2		9.8	44.3	50.0		8.8	8.0	56.0	K	6.8	28.8	38.4	Sj
8.9	5.0	43.4	K	9.5	46.7	5.8		9.3	51.5	45.0		9.5	14.2	7.5		9.3	30.3	21.9	
9.8	17.0	7.3		9.2	53.5	53.1		9.8	33 3.8	31.7		9.8	27.7	1.5		8.8	42.4	52.5	K
9.5	17.1	24.6		9.2	58.7	5.9	M	9.5	6.5	23.5		8.7	28.3	13.7	Sj	9.4	54 5.4	27.9	
9.8	55.9	55.0		9.8	24 22.4	38.6		7.5	6.9	37.6	M	7.5	30.2	54.2	Sj	9.3	8.8	8.7	
9.5	8 8.1	41.7		9.8	25.1	14.2		8.8	16.2	12.9	M	9.0	32.9	36.7		8.5	11.9	32.1	M
9.6	42.3	30.3		9.7	30.0	14.7		9.4	32.7	30.1		8.3	36.8	23.3	M	8.7	17.8	5.0	M
8.6	52.3	5.0	M	9.8	25 7.6	39.9		9.4	41.0	21.2		9.6	38.4	4.4		9.3	20.1	10.0	
9.8	9 12.8	40.1		9.2	29.4	52.3		9.7	42.0	10.1		8.8	56.0	50.8	K	9.5	20.4	3.5	
9.4	13.4	22.9		9.7	30.6	6.7		9.1	55.5	0.6	K	9.6	46 13.9	49.8		9.3	42.6	10.7	
9.4	14.0	37.4		8.6	58.1	55.2	K	9.1	34 16.9	14.8	K	9.3	16.7	48.3		8.8	52.6	23.2	Sj
9.3	45.4	55.3		9.5	26 4.7	55.3		9.0	21.8	41.1	M	8.0	18.9	47.5	K	9.3	55 7.0	4.3	
9.5	10 4.7	54.2		9.8	22.9	15.8		9.7	29.7	5.5		9.5	26.2	57.2		9.1	21.2	35.5	
9.5	17.3	3.2		9.2	29.1	44.9		9.3	31.0	32.4	Sj	10	41.4	42.1		9.5	26.1	37.9	
9.4	35.0	25.2		8.2	33.6	55.2	K	8.8	42.1	56.4	K	9.0	43.5	46.0	K	9.2	59.6	43.8	M
7.5	11 19.8	9.7	Sj	8.9	47.6	48.9	K	9.5	43.0	20.7		9.2	44.0	2.6		9.5	56 18.5	31.5	
9.2	51.6	46.9		8.8	59.0	34.2	M	9.6	58.3	40.0		9.0	45.4	49.7		9.0	46.2	3.7	
8.5	55.0	18.9	M	9.5	27 29.6	39.8		9.5	35 8.7	55.6		9.0	47.0	53.8		9.0	47.0	38.4	M
9.5	12 15.7	24.0		9.1	30.8	13.1	M	8.7	9.4	56.9	Sj	9.6	47 1.0	39.5		9.9	56.1	16.0	
9.0	37.3	7.7	K	9.4	48.9	16.6		9.7	45.8	17.8		9.1	8.0	13.9		9.2	57 1.9	20.1	
9.5	47.1	46.9		9.3	51.3	54.7		9.2	55.2	50.5		9.2	8.5	44.6		8.1	17.1	15.2	Sj
8.5	55.7	54.8	Sj	9.7	51.7	49.5		9.3	36 3.1	20.7	M	9.1	9.4	41.0	K	5.7	18.4	14.4	K
10	13 0.4	59.9		9.0	54.2	13.1	M	8.3	17.0	37.1	K	9.2	11.3	32.3		9.5	23.3	54.7	
9.5	9.3	6.2		9.3	28 23.0	19.8		9.5	43.0	27.6		9.5	15.4	11.4		8.8	28.2	23.3	Sj
9.5	23.0	29.1		8.8	32.1	23.5	K	10	47.0	20.7		9.4	19.1	55.6		9.2	39.0	44.7	M
9.3	50.3	55.7		9.4	33.6	58.4		9.4	49.5	43.6		9.7	19.8	0.3		9.2	45.5	36.1	
9.1	14 33.1	45.8		8.3	41.4	23.1	K	9.3	37 4.4	10.1		9.3	26.4	32.2		9.8	56.0	52.1	
9.4	48.5	57.9		8.5	42.3	45.9	Sj	9.1	6.1	5.0	M	9.4	39.0	44.0		9.3	58 0.7	55.8	
8.5	51.6	58.7	K	7.8	47.1	40.5	Sj	9.2	30.3	48.7		8.7	48 17.5	58.6	Sj	9.8	11.2	34.2	
8.8	57.3	19.5	M	9.5	29 13.6	43.7		9.3	32.5	19.8		8.3	19.4	42.1	Sj	8.5	32.5	51.6	M
9.1	15 3.5	33.4		9.0	15.3	3.4	M	9.3	35.6	56.3	M	9.5	20.1	31.9		9.4	35.7	6.8	
9.4	7.6	41.0		7.5	21.1	43.7	K	9.8	38.2	30.7		8.7	25.1	56.0	K	8.9	37.6	6.9	Sj
9.4	35.7	56.8		9.1	29.4	58.8		8.0	47.9	44.3	K	9.4	38.9	39.0		9.5	49.5	58.9	
9.6	38.3	13.6		9.0	34.1	40.7	K	9.5	50.4	46.5	M	9.2	41.8	35.0	M	9.0	59 22.0	49.2	
8.4	16 17.1	51.2	Sj	9.1	41.7	29.7		9.0	51.2	49.0	M	9.4	51.6	28.3		8.9	36.9	58.3	M
9.7	32.2	13.4		6.8	30 3.8	55.7	K	9.6	38 1.4	43.2		9.2	54.4	45.5	M	9.2	40.0	2.4	
7.5	38.3	9.9	K	9.4	6.0	44.0		9.4	25.2	15.5		9.5	49 3.8	34.0		8.8	0 0.4	34.0	
9.7	17 16.4	32.3		9.3	8.6	34.6		9.8	39 3.6	8.7		8.5	6.6	12.3	M	9.1	3.5	58.3	

4701—4760				4761—4820				4821—4880				4881—4940				4941—5000			
	19h	−4°			19h	−4°			19h	−4°			19h	−4°			19h	−4°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.1	0 20.7	47.6		9.6	10 52.5	0.7		9.5	22 17.3	48.6		9.8	33 42.0	2.2		9.4	42 26.0	33.2	
9.2	20.7	11.3		9.5	54.0	50.2		9.2	19.7	12.7		8.8	45.5	10.4	K	9.5	33.1	48.0	
9.5	1 18.3	34.9		9.3	57.5	47.1		9.5	25.3	44.6		7.7	34 8.6	36.9	Sj	9.1	37.4	52.6	
9.5	2 3.0	2.8		9.1	59.4	44.9		9.7	28.2	5.0		9.4	10.1	43.9		9.5	45.0	33.2	
10	7.5	52.7		9.3	11 9.5	8.2	M	9.7	35.8	0.8		9.0	12.0	37.8	M	9.6	54.0	26.5	
9.5	16.6	48.0		9.0	11.4	30.0		9.0	36.6	41.1	M	9.5	12.6	27.8		9.5	43 5.0	52.6	
8.2	34.5	17.0	K	9.3	12.3	10.9		9.5	54.4	13.8		9.8	16.0	9.6		9.5	5.1	6.9	
8.5	44.3	59.0	K	8.2	14.0	1.8	Sj	9.5	55.7	22.6		9.5	28.8	56.5		8.3	11.2	54.5	K
9.6	3 0.4	27.9		9.5	21.0	57.2		9.5	56.3	57.2		9.0	29.3	24.2	R	9.0	15.1	38.1	
9.3	13.3	57.2		9.5	21.4	11.0	M	9.5	23 12.6	42.9		9.0	54.0	11.7		8.5	25.0	58.9	Sj
9.4	22.2	17.9		9.9	25.6	14.1		9.4	15.3	39.5		9.4	35 3.6	19.1		9.5	33.5	19.2	
8.0	28.5	21.7	K	9.5	32.5	12.5		8.5	23.0	33.5	Sj	9.4	12.0	23.1		9.4	43.2	58.1	
9.3	38.9	2.1		9.2	33.5	14.9	M	9.4	42.0	3.0		9.0	16.0	21.6	Sj	9.8	56.5	31.5	
9.4	53.0	32.9		9.5	48.3	56.0		8.5	48.2	12.2	K	9.5	16.8	36.7		9.5	44 18.3	1.6	
9.5	56.4	26.2		9.8	12 8.0	55.5		9.2	24 15.2	11.5		9.5	50.7	15.9		9.5	40.0	40.9	
8.5	4 2.5	6.5	K	9.5	31.7	17.1		9.5	42.2	11.7		8.8	36 9.1	45.3	Sj	9.8	54.9	43.1	
9.4	18.2	29.0		10	46.4	33.8		9.1	48.2	19.0	K	9.8	30.0	18.9		9.8	45 9.5	42.0	
9.5	22.5	53.2		9.5	48.5	45.9		9.5	57.5	2.4		9.0	39.0	35.4	K	9.3	17.2	15.1	
8.2	41.0	41.8	S	8.7	59.4	19.4	M	9.8	25 14.9	27.0		9.4	45.0	34.5		10	17.4	50.4	
9.6	53.0	35.2		9.8	13 4.8	56.0		9.1	27.4	23.6		9.5	37 0.6	1.4		8.0	39.6	56.7	K
9.4	58.6	19.0		7.0	7.7	46.0	L	9.0	58.5	28.8	K	9.4	14.7	59.3		9.3	46 1.0	6.0	
9.4	5 13.3	45.9		9.5	21.4	17.9		9.0	59.5	29.0	K	9.1	17.9	19.7		9.0	6.5	7.2	M
9.4	24.9	11.3		9.7	28.0	14.4		8.5	26 48.7	45.6	Sj	8.3	34.6	52.0	Sj	9.5	7.5	47.0	
8.0	27.8	13.4	L	9.5	36.5	43.4		9.5	27 1.5	10.0		9.3	38.5	25.5		9.6	18.1	1.3	
9.0	57.0	39.7	M	9.7	36.8	57.5		9.7	32.3	18.8		8.0	38 1.0	21.8	Sj	9.8	22.9	2.5	
9.5	59.9	7.4		9.5	55.0	45.6		7.8	32.7	37.1	K	9.1	12.4	39.8		9.8	47 0.4	27.3	
9.2	6 33.4	0.5		8.5	14 44.0	45.0	Sj	9.5	57.0	3.1		8.5	29.0	32.4	M	9.5	11.8	8.2	
9.8	51.0	58.6		9.4	49.4	31.9		9.5	28 6.3	28.0		9.5	36.5	25.5		9.1	31.5	40.7	Sj
9.1	7 1.5	7.0		9.9	15 20.0	14.8		9.4	12.2	16.3		9.5	46.5	28.4		9.9	48 1.0	37.2	
9.8	11.7	39.9		9.6	27.0	0.8		9.0	14.4	51.1		9.0	49.7	11.1		9.6	4.0	45.0	
9.4	14.3	56.0		9.1	48.6	50.3	M	9.5	28.5	23.4		10	51.1	3.6		9.8	16.1	56.2	
9.0	21.0	42.6		9.2	50.5	5.3		8.5	32.3	42.4	M	10	58.8	19.2		9.5	18.4	15.8	
9.1	22.2	44.8		8.7	53.1	40.5	K	8.8	29 0.1	52.2	M	9.6	39 2.8	3.5		9.4	22.5	9.6	
9.6	23.1	29.1		9.3	57.1	46.5		9.5	5.4	48.0		9.4	2.8	55.3		9.8	27.1	51.7	
9.5	25.4	33.7		9.5	16 4.0	9.7		7.5	5.6	36.5	Sj	9.0	5.1	47.3		9.3	33.6	49.7	
9.3	29.6	44.6		9.7	21.3	56.7		9.8	23.0	24.1		7.8	11.5	0.3	K	9.9	57.8	15.1	
8.4	33.2	12.5	M	9.5	34.1	51.5		9.5	26.3	10.6		8.8	14.2	33.4		9.4	49 50.5	40.6	
9.3	45.4	19.8		9.7	38.9	59.1		8.5	29.4	52.4	Sj	9.5	28.7	55.3		9.0	50 4.9	12.7	
9.1	52.1	25.2		8.0	42.0	33.8	K	9.5	41.8	13.8		9.1	47.1	44.5		8.9	7.0	40.6	M
9.2	53.1	25.8		9.8	56.6	42.2		8.3	59.6	14.1	R	9.5	55.8	29.3		9.5	24.1	52.0	
9.5	8 1.0	51.3		9.4	17 8.3	52.2		5.0	30 6.4	57.8	L	9.5	59.6	42.5		9.3	29.4	26.1	
9.4	11.6	25.2		9.5	28.1	31.3		9.7	21.8	5.7		9.5	40 39.9	58.8		8.5	31.6	44.7	Sj
10	16.9	19.1		8.5	29.5	46.7	Sj	9.1	22.9	10.6		8.9	41 8.1	12.0		9.1	37.5	39.1	
10	38.6	48.5		9.3	42.6	5.7		9.5	25.1	53.8		9.5	12.6	41.0		8.2	49.8	44.7	K
9.2	49.3	43.1		8.0	48.6	1.0	K	8.6	25.1	55.8	K	9.8	13.0	30.0		9.4	56.3	27.2	
9.4	52.5	32.9		9.9	18 8.0	8.4		9.0	32.4	43.8		7.8	17.0	51.1	Sj	8.8	51 27.4	33.7	M
9.6	55.7	7.7		9.8	21.5	4.4		9.5	32.5	29.9		9.5	17.2	56.6		9.0	44.8	55.6	K
9.4	9 9.7	2.8	M	9.8	36.7	30.6		9.5	56.6	38.1		9.7	33.4	36.6		9.5	52 7.0	42.2	
9.8	15.5	18.2	•	9.5	54.9	4.0		9.3	31 10.0	7.2		9.5	34.3	18.2		8.5	48.7	3.8	M
7.8	16.5	54.4	L	9.5	19 9.1	8.3		8.5	15.4	41.2	Sj	9.9	35.5	7.2		9.4	55.8	13.1	
8.2	27.0	32.0	L	8.5	34.7	21.0	Sj	9.5	47.0	25.7		10	38.9	37.0		9.2	53 1.5	41.1	
10	30.4	12.1		8.8	36.0	34.2	M	9.8	32 15.3	9.2		9.4	42.6	18.0		7.8	9.0	42.5	K
9.0	32.0	3.7		9.1	41.4	28.1		9.0	30.0	26.4	Sj	9.6	46.8	20.7		9.1	15.1	55.2	M
9.0	40.2	33.7	M	8.8	50.7	28.2	Sj	9.8	51.3	48.6		10	46.8	29.9		8.5	22.5	11.3	Sj
9.8	45.7	8.7		9.0	20 55.9	1.9		9.8	51.6	39.8		9.8	49.4	31.0		9.8	36.5	42.3	
9.8	57.9	30.9		8.3	21 40.3	40.5	K	9.5	33 2.5	14.0		8.0	56.0	53.4	K	9.5	43.1	56.6	
9.5	10 14.4	9.6		9.7	44.5	12.2		7.5	5.5	21.7	B	9.5	42 8.1	38.8		9.5	43.6	51.9	
9.5	28.9	27.9		9.1	45.4	23.6		9.5	21.4	38.7		8.2	11.6	17.0	K	8.8	56.9	13.2	K
9.5	35.5	42.8		9.8	22 1.0	29.7		9.2	22.6	16.0		9.1	11.7	24.7		9.5	54 4.2	0.5	
9.6	43.3	57.6		9.5	15.1	40.4		8.0	29.6	15.0	K	8.5	20.4	59.2	K	8.8	23.5	15.9	K

4781: röthlich 4903: 35″82 52′6″9 B_1, Ep. 1883.64

5001—5060					5061—5120				5121—5180				5181—5240				5241—5300			
	19h—20h		—4°			20h		—4°		20h		—4°		20h		—4°		20h		—4°	
m	m	s	′		m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.5	54	45.6	50.4		9.3	6	19.1	39.1	9.6	17	57.8	48.1	9.2	26	18.2	15.4	7.0	36	36.6	25.8	K
8.8	55	15.1	53.1	M	9.3		27.8	30.0	9.5	18	2.8	58.8	9.5		45.1	24.8	9.0		54.6	53.5	K
8.7		44.6	45.9	K	9.7		32.5	32.0	9.1		23.3	22.1	9.5		58.0	52.8	9.4	37	22.6	4.5	
9.5		46.7	57.1		9.8		34.9	52.1	7.7		25.0	20.1	K	9.6	27	3.0	26.3	9.2		35.6	3.0	
9.8		52.5	27.6		9.5		44.9	12.2	9.5		36.2	28.4	9.6		5.3	11.2	9.5		46.0	59.1	
8.3	56	5.3	45.8	K	9.5	7	42.4	18.5	9.0		39.1	59.2	M	9.0		17.5	4.1	K	9.5		50.6	41.2	
9.1		22.2	53.2	Sj	9.8		56.1	38.0	9.5		50.0	20.5	9.0		20.0	46.5	9.6		53.6	59.5	
9.7		53.9	12.1		9.2	8	2.8	30.9	9.3	19	3.0	11.5	9.8		40.9	50.6	8.8		56.2	57.5	K
10	57	13.2	7.9		9.6		26.2	16.0	9.8		11.9	45.8	9.5		52.5	2.1	9.5	38	9.1	25.0	
7.3		27.3	43.5	K	9.5		31.6	47.8	9.0		13.5	44.7	K	9.2		53.7	36.8	9.8		27.3	36.8	
8.8		29.3	12.3	M	9.7		36.4	12.4	9.7		20.1	13.1	9.8		58.4	36.4	9.5		42.1	1.8	
9.2		44.6	19.6		9.5		41.1	47.6	9.7		21.2	29.0	9.7	28	10.3	11.1	9.1		45.9	47.1	M
6.5	58	34.0	29.0	K	9.2		47.2	58.8	9.3		29.8	55.8	9.7		17.9	8.5	9.5		46.3	17.3	
9.0		37.5	35.1		9.4		55.6	38.9	9.4		52.9	33.2	9.8		20.7	12.7	9.1		59.6	44.3	
9.1		48.3	49.8		9.4		58.7	50.3	9.8		56.4	19.1	9.1		41.8	34.7	9.4	39	1.8	15.2	
7.2		56.1	49.9	Sj	9.4	9	8.4	1.4	9.8	20	0.7	18.9	9.8		42.0	48.5	8.5		4.6	46.3	K
8.3	59	19.3	10.2	M	9.8		31.9	52.3	9.2		16.1	18.0	9.1		59.8	44.9	M	8.3		9.5	35.1	Sj
9.2		22.3	38.8	M	10		55.0	22.1	9.7		16.1	55.3	9.5	29	0.1	46.8	9.3		19.1	35.1	
9.5		41.0	10.0		9.9	10	4.6	14.8	9.5		19.7	57.8	9.7		27.2	59.3	9.5		47.6	31.2	
9.8		46.1	49.9		9.5		26.5	49.9	9.7		23.0	55.3	9.7		30.1	22.2	9.7		48.2	11.2	
9.0	0	2.3	0.6	K	9.8		30.0	11.4	9.1		23.3	57.8	M	9.0		55.6	34.1	9.6		55.1	5.7	
8.8		7.5	33.1	M	9.4		32.6	27.2	9.1		31.7	38.5	8.5	30	8.4	51.6	K	9.5	40	4.3	5.0	
9.7		10.9	30.3		9.5		33.4	27.7	9.5		33.5	22.4	9.5		15.0	22.1	9.8		23.0	40.9	
8.9		42.8	59.1	K	9.6		53.0	44.4	9.2		43.5	0.1	6.8		31.6	53.4	K	8.8		53.1	7.5	L
9.5		51.4	9.4		9.6	11	3.7	46.5	8.5		47.0	1.9	K	9.3		42.6	47.2	9.4		58.5	3.2	
8.8		52.1	4.5		9.5		17.4	14.4	8.5		50.8	8.6	9.8	31	14.1	46.3	9.6	41	27.7	59.4	
8.9		55.5	10.9		8.7		20.7	44.3	K	8.0		59.0	54.4	M	10		19.0	34.2	9.5		32.2	55.8	
9.8		55.7	54.0		9.9		29.3	49.9		9.5	21	9.0	4.6		9.5		30.1	30.2	9.6		45.6	38.0	
9.5	1	6.9	19.2		8.8		35.9	6.3	M	9.1		12.4	31.8		10		53.0	12.8	9.8		50.4	16.4	
9.3		10.9	11.9		8.4		43.4	11.8	L	9.6		16.5	33.3		9.8	32	13.1	23.3	8.6	42	1.0	25.3	K
9.8		26.6	57.0		9.8	12	6.5	55.4		9.1		23.7	14.1	M	9.9		26.2	42.5	8.5		9.7	24.4	Sj
9.1		51.0	22.0		9.5		13.6	18.2		9.4		38.1	57.2		9.7		39.5	44.2	9.2		12.6	2.9	
9.6	2	22.5	43.7		9.8		30.5	42.4		8.0	22	3.5	39.5	K	9.0		44.2	7.6	8.9		14.3	8.5	
8.9		29.4	26.3	R	9.7		37.6	15.2		8.0		23.3	54.6	Sj	10		48.7	19.8	9.4		46.1	19.0	
9.7		35.8	46.4		9.5		44.4	0.4		9.5		32.4	12.5		9.5		49.5	24.0	9.2		56.3	10.4	M
9.5		45.9	16.6		9.8		54.5	43.7		9.1		40.2	39.3	K	8.8		54.1	20.0	K	9.4	43	0.6	46.7	
9.1		46.6	54.4	Sj	9.4	13	4.1	28.3		9.0		50.0	3.5		9.5		58.8	19.7	9.8		19.0	32.9	
9.7		47.1	50.4		9.3		5.0	1.9		9.8		58.5	40.4		9.1	33	5.6	45.3	9.7		19.4	15.6	
9.0	3	14.3	6.1		9.1		6.9	2.6		9.7	23	1.6	41.4		9.8		24.6	47.9	9.8		31.1	38.9	
9.9		25.5	59.4		9.9		22.4	10.9		9.3		7.0	16.1	M	8.7		36.3	15.5	Sj	8.0		42.6	49.4	M
9.8		27.1	27.9		9.7		36.0	40.4		9.7		10.5	59.8		8.8		38.0	36.9	Sj	9.2		50.3	9.6	M
7.8		27.6	0.3	K	9.8		56.0	39.3		9.5		11.0	5.8		9.8	34	6.1	50.4		9.5		59.3	10.9	
8.8		30.9	59.2	S	9.8		58.9	22.0		9.9		49.1	13.6		9.4		7.4	54.3		9.8	44	16.5	34.9	
9.7		31.4	16.5		9.2		59.6	57.6	M	9.9	24	3.4	28.0		9.5		13.9	36.6		9.6		45.5	27.8	
9.4		50.5	29.2		9.2	14	7.2	51.6	Sj	9.8		10.6	12.9		9.5		15.7	8.8		9.6		48.0	34.9	
9.6		51.3	33.0		9.8		34.4	40.4		9.0		24.5	22.7		9.4		26.1	37.0		9.6		59.6	10.2	
9.8	4	0.7	56.8		9.8		35.0	54.3		9.3		43.7	13.8		9.1		33.2	7.7		9.5	45	10.9	51.9	
9.5		9.9	13.8		8.5		36.9	5.6	Sj	9.0		47.0	0.0		9.0		37.4	1.9	M	10		46.1	31.6	
10		13.6	27.4		9.4	15	16.9	11.4		8.8		54.0	42.5	Sj	9.5		51.4	21.3		9.6		50.6	44.3	
9.5		18.6	14.7		7.8		31.6	16.2	K	9.5		58.5	9.4		9.5		57.1	39.4	M	9.5		59.1	2.4	
9.5		41.7	53.9		9.7		56.0	42.3		9.8	25	10.4	35.6		9.3	35	11.1	43.2		9.8	46	20.8	32.7	
9.8		56.6	47.2		9.6	16	2.8	6.8		9.0		16.5	15.1	K	9.8		22.1	4.7		9.7		22.0	17.1	
9.5	5	16.0	19.3		9.7		9.6	23.0		9.6		20.6	15.8		9.9		27.8	56.9		9.3		30.8	26.3	
8.9		26.6	44.8	M	10		41.7	35.5		9.8		32.4	49.1		9.9		36.3	16.9		9.0		33.5	27.6	
9.5		36.0	35.1		10		42.5	54.6		9.8		39.5	34.7		9.5		41.1	0.3		9.6		33.9	1.7	
9.5		46.6	45.6		9.5	17	2.4	16.7		9.5	26	0.0	21.7		8.7		51.2	58.3	M	9.8		59.7	54.4	
9.5		50.6	12.6		9.1		11.0	28.5	M	9.5		10.4	32.0		9.1	36	0.4	26.7		9.2	47	12.0	31.2	
9.5		52.0	22.4		9.0		26.1	57.6	K	9.3		13.9	31.6		9.8		20.6	23.5		9.4		19.1	4.5	
8.6	6	18.1	45.3	K	9.6		54.0	54.1		9.3		14.5	22.6		9.6		28.8	14.2		9.5		33.5	19.1	
9.4		18.3	29.7		9.4		54.9	8.5		9.2		17.0	44.5		8.9		31.1	38.0	Sj	9.1		40.3	30.0	M

5301—5360				5361—5420				5421—5480				5481—5540				5541—5600			
20h		−4°		20h—21h		−4°		21h		−4°		21h		−4°		21h		−4°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.5	47	50.8	0.8	9.8	59	1.6	45.0	9.9	12	24.4	43.0	9.7	25	20.6	57.1	9.3	41	40.5	31.2
9.3		53.1	45.2	8.9		39.1	11.4 M	9.5		34.9	43.9	9.8		40.8	21.3	9.8		54.6	48.4
8.5		54.0	22.0 K	9.8	0	5.8	28.3	9.1		44.0	6.3	9.8	26	6.3	23.1	9.4		55.5	31.9
8.7	48	6.6	39.9 Sj	9.8		11.9	9.7	9.5		51.6	36.5	9.8		29.4	35.1	9.6	42	4.9	57.8
8.9		16.7	13.8 K	9.8		18.5	55.2	9.2		57.5	4.3 Sj	9.0		37.6	5.5 K	10		8.0	35.2
9.2		17.0	1.8	9.8		32.3	52.8	9.6	13	2.9	44.1	9.5		41.1	50.1	9.5		15.1	40.1
6.9		42.6	6.8 Sj	9.8		49.7	44.1	9.9		3.3	47.7	7.5		41.1	3.2 Sj	9.3		23.0	36.5
9.5		43.1	28.0	9.8		51.8	19.9	9.5		30.0	1.8	8.5	27	29.8	22.3 K	8.7		33.9	58.5 M
10		50.4	16.5	9.5		54.6	8.5	9.4		33.8	30.2	6.0		43.0	37.7 K	9.0		33.9	0.5 M
9.2		53.0	32.1	9.0	1	17.0	0.2	9.5		34.2	55.0	9.5		54.1	59.7	9.4		52.1	19.3
7.5	49	9.5	13.8 K	8.0		28.9	23.2 K	9.5		36.5	1.2	9.4	28	25.8	46.0	8.8		52.5	36.6
9.8		10.7	46.0	7.8		44.1	28.6 K	9.5		50.1	19.0	9.7		42.3	48.0	9.8		59.9	6.7
9.7		12.6	42.0	9.1		58.4	40.6	8.2	14	16.9	47.0 B	9.0		58.5	43.3 K	9.5	43	0.1	37.1
9.6		18.6	42.0	9.5	2	0.2	40.0	9.9		34.6	13.2	9.5	29	3.3	29.8	9.2		26.2	31.5
9.0		31.1	33.3 M	9.5		6.6	25.7	9.3		55.0	53.7	10		33.5	45.6	9.1		27.3	32.0
9.5		47.1	36.4	8.9		41.8	0.9	9.4		57.0	18.0	9.9	30	12.1	14.4	9.8		27.8	51.6
9.6	50	6.6	44.5	9.3		48.5	21.1	9.5	15	14.8	27.6	9.5		20.2	13.6	9.2		45.9	21.7
9.1		14.1	4.7 M	8.8		51.7	29.9 M	8.2		16.0	9.3 Sj	9.0		33.5	13.5 Sj	9.3		59.3	30.6 Sj
9.8		36.5	32.6	9.5	3	8.2	26.5	9.6		48.1	59.3	9.4		35.0	43.0	9.5	44	14.4	14.1
9.3	51	6.3	9.7	9.7		19.8	40.9	9.4		55.8	32.1	9.8		49.2	35.7	9.8		22.0	33.5
7.0		9.5	23.9 K	9.8		22.7	37.4	9.9	16	11.5	49.5	9.3		56.5	19.0	9.9		45.7	23.7
9.1		10.3	35.3 Sj	8.0		40.4	43.7 K	9.6		39.1	7.1	9.2	31	2.5	37.1	9.7		52.7	12.9
8.3		34.1	44.4 Sj	9.7		49.9	33.3	8.3	17	5.3	57.5 K	8.3		5.8	13.9 K	8.8	45	6.6	23.6 Sj
8.5	52	3.0	56.9 Sj	9.5		53.6	34.5	6.7		17.7	1.0 K	7.7		7.0	48.4 K	7.2		11.0	40.2 L
9.6		20.0	59.7	9.0	4	2.4	5.1	9.5		41.9	26.2	9.0		15.5	37.5	9.3		33.6	48.5
10		34.1	22.3	9.3		12.4	32.8	5.6		43.1	10.6 Sj	9.8		18.1	26.3	9.4		43.7	51.2
10		40.5	25.0	9.7		37.2	22.3	9.9	18	6.4	41.8	10		18.2	49.3	9.7	46	28.1	17.7
10		44.8	21.6	9.4		38.6	15.6	9.9		29.5	52.5	10		51.2	5.3	5.7		35.9	57.2 K
9.8		48.0	1.3	8.3		59.9	53.1 L	9.9		47.0	51.8	8.7	32	32.0	41.6 K	9.3	47	9.7	53.3
9.5		54.9	43.7	9.4	5	22.4	0.8	9.0		52.4	48.3	9.1		45.7	7.2	8.5		25.2	53.9 K
9.5	53	19.3	27.1	9.0		22.7	29.3	9.5	19	26.9	45.8	9.5	33	5.4	30.9	10		28.6	37.6
8.0		33.2	0.3 K	7.8		38.2	52.2 K	9.7		41.4	56.9	8.8		8.5	12.6 M	9.1		35.6	35.8
9.8		37.6	34.7	8.7		38.8	35.5	9.5		53.1	12.5	10		23.6	47.0	9.2		51.0	22.9
9.1		39.6	30.9	9.6	6	33.9	49.1	9.8		54.7	46.4	9.5		42.5	46.5	8.8		58.1	36.8 R
9.8		47.6	28.9	9.1		39.4	1.3	9.3	20	29.1	21.6	10		46.2	9.1	9.0	48	2.3	54.1 K
9.4		52.0	49.0	9.0		45.1	24.5	9.5		30.0	27.5	10	34	26.2	15.7	9.2		4.4	42.3
7.3	54	4.1	41.9 Sj	10		53.4	30.1	9.5		52.5	51.4	9.1	35	2.6	0.5 M	9.5		11.5	21.4
8.8		10.2	4.5 K	9.0	7	35.6	25.2	8.8		59.9	47.4 K	9.3		7.7	47.2	9.2		31.2	44.3 Sj
9.8		17.7	44.6	9.9	8	24.7	21.5	8.7	21	34.5	51.4 K	9.5		25.4	36.1	9.8		53.4	53.5
9.0		25.6	20.2	9.5		32.8	42.2	8.5		53.6	8.8	9.6		44.5	58.0	10	49	43.4	20.2
9.1		41.1	16.4	10		49.6	59.3	9.6	22	16.1	9.0	9.4		58.0	12.6	8.7		44.8	34.3 B
9.8	55	32.2	12.9	9.2		49.6	25.7 Sj	9.7		34.5	47.2	9.5	36	22.8	56.0	9.6	50	2.7	46.4
9.5		37.1	33.2	9.3	9	33.9	49.0	9.4		43.6	7.2	9.5		45.6	18.3	9.0		15.2	1.2
9.8		56.0	16.4	8.3		35.4	50.7 K	9.4		48.4	55.1	9.5		53.6	22.5	8.7		26.0	25.6 L
9.1	56	3.6	29.0 Sj	9.5		49.0	3.1	9.2		51.3	35.2	9.8		54.2	54.9	7.8		35.4	10.8 Sj
9.8		18.5	18.8	9.3		53.8	29.8	9.4		56.7	22.7	8.9	37	2.0	41.5 K	9.9		39.5	26.5
9.5		19.0	19.7	9.7		58.1	24.8	9.3		58.6	54.7	9.5		17.2	27.0	9.3		41.4	0.6
8.6		19.6	13.7 K	9.0		59.3	33.1 R	10	23	11.1	14.5	9.6		43.4	18.5	9.7	51	1.0	25.4
9.2		22.9	38.2	9.3	10	4.7	28.2	9.0		21.0	48.3 Sj	9.7		49.2	57.9	9.8		28.1	31.1
9.8		34.7	10.3	8.5		17.2	5.4 K	9.8		24.6	1.2	9.6		49.5	34.6	9.6		38.9	41.5
9.3		38.7	14.1	9.3		24.1	21.6	9.5		47.5	46.8	9.5	38	30.0	42.1	10		45.6	14.7
9.2		52.3	1.0	9.3		25.4	28.1	8.8		48.8	31.0	9.5		40.7	9.3	10	52	7.8	51.3
9.4	57	22.9	44.2	7.8		52.3	16.9 L	9.0	24	14.4	16.0	9.5		43.2	1.5	9.9		30.5	22.1
9.3		23.4	37.5	9.8		57.8	28.8	9.5		16.6	6.7	8.5		49.3	47.5 L	9.5	53	29.2	38.2
7.0		55.6	56.0 Sj	9.7	11	2.7	26.8	9.6		19.7	35.4	9.8	39	26.0	36.6	9.8		29.5	18.7
9.5	58	1.8	37.5	10		33.6	26.1	9.7		20.3	30.0	9.6		30.4	27.0	9.8		43.1	41.3
9.3		2.1	15.7	9.5		44.3	16.5	9.3		33.1	54.7	9.6		42.3	5.1	8.6	54	16.0	17.6 Sj
9.5		4.6	0.8	9.3	12	4.2	1.4	9.5		38.5	45.0	9.4		50.7	5.6	9.3		32.6	34.0
9.5		10.7	49.1	9.6		4.2	19.6	9.9	25	8.4	43.4	9.0	40	34.1	38.8 Sj	9.1		37.0	8.4
9.3		45.8	2.4	9.5		12.2	34.2	10		9.5	25.3	8.7	41	17.3	15.9 R	9.3		42.4	9.2

5493: 58:78 43′0″.7 B_1, Ep. 1883.64

5601—5660

m	21h—22h m s	—4° ′	
9.5	54 57.7	48.0	
8.9	55 4.5	1.9	
8.9	21.3	10.1	
9.3	59.0	22.6	
9.9	56 37.2	11.2	
9.4	55.5	25.7	
9.8	57 8.7	39.6	
9.8	48.8	11.2	
9.6	50.6	33.9	
9.9	56.2	44.1	
9.8	58 4.5	22.7	
9.4	49.7	43.0	
9.3	50.6	19.1	
9.4	59 41.4	57.6	
9.0	52.3	47.4	
9.0	54.9	51.2	M
7.5	0 40.2	14.3	K
9.0	1 27.1	22.9	
9.5	34.7	39.2	
8.5	2 25.9	50.8	Sj
9.4	35.4	27.7	
9.6	38.6	56.7	
6.8	48.2	36.1	K
9.1	50.0	8.5	
6.0	3 0.4	58.8	K
9.0	20.7	27.8	
10	32.3	8.6	
9.5	4 36.6	15.7	
9.6	39.6	58.7	
9.8	51.4	50.6	
9.3	5 2.9	29.6	
9.6	17.8	47.8	
9.7	31.0	57.8	
9.5	36.6	7.9	
8.8	40.1	35.3	
9.1	6 1.0	52.4	
8.5	10.2	29.3	K
9.9	30.1	20.2	
9.5	7 9.8	25.0	
8.5	21.8	40.0	M
9.5	40.9	52.5	
9.6	57.6	9.3	
9.4	8 21.3	41.5	
9.7	37.8	12.8	
9.0	46.3	39.1	
9.5	9 10.4	49.6	
8.7	10 12.8	3.9	
8.6	17.1	58.6	Sj
9.6	32.0	32.5	
9.7	32.6	21.0	
9.5	44.8	25.6	
9.8	57.6	10.2	
9.5	11 54.1	1.3	
9.2	12 5.1	44.8	
7.8	16.9	47.3	K
8.5	13 0.4	53.5	Sj
10	2.4	12.5	
9.0	7.8	14.8	
9.4	13.3	59.5	
9.2	19.7	10.2	

5661—5720

m	22h m s	—4° ′	
9.1	13 28.1	17.9	M
8.3	14 30.8	31.7	M
8.0	15 6.3	28.1	K
9.5	30.2	6.6	
9.1	39.4	14.8	
9.9	51.3	13.1	
9.0	16 3.9	34.3	
9.8	28.7	33.7	
9.0	40.4	44.2	
9.6	44.1	55.2	
9.1	17 22.5	14.4	
9.5	22.7	40.6	
9.5	28.6	54.5	
9.6	18 24.5	19.8	
9.7	43.7	49.9	
9.6	48.3	45.1	
10	51.4	13.0	
9.3	19 28.6	2.5	
9.0	33.1	0.5	
9.0	38.5	10.4	
9.4	20 30.1	33.2	
9.2	46.9	38.2	
8.8	21 52.2	55.6	M
9.5	22 10.7	30.2	
9.5	52.3	59.7	
9.4	23 10.3	31.2	
9.2	15.9	32.8	
9.5	49.0	36.0	
9.5	24 0.7	1.2	
9.1	20.3	58.3	M
9.5	22.3	30.0	
9.2	36.3	54.9	
9.4	41.5	45.2	
8.3	42.1	47.9	K
9.0	25 7.5	52.0	K
9.1	32.5	53.7	Sj
9.5	36.1	7.7	
9.4	45.9	8.5	
10	47.3	22.7	
9.8	50.6	0.3	
9.7	26 1.6	22.5	
9.6	13.4	1.7	
9.0	50.5	41.7	
9.5	52.2	8.9	
7.8	27 8.1	3.1	K
8.5	11.4	21.0	K
8.5	42.5	41.7	K
9.4	28 35.9	36.7	
9.4	43.3	22.7	
8.7	44.0	45.9	Sj
9.7	29 2.8	42.0	
10	4.7	26.8	
9.5	31.7	1.6	
9.5	32.0	57.1	
9.3	39.0	44.5	
5.3	30 14.2	58.4	K
9.0	47.8	27.4	L
9.1	31 3.9	31.4	
9.0	4.7	36.1	M
10	30.9	37.1	

5721—5780

m	22h m s	—4° ′	
8.5	31 44.9	21.7	Sj
9.4	50.8	16.1	
9.1	32 9.2	16.4	L
9.5	29.6	52.9	
9.4	33 0.5	34.1	B
9.5	2.2	19.3	
9.5	10.7	12.0	
6.7	17.9	18.4	Sj
9.9	38.8	10.6	
9.2	47.9	57.6	
9.4	50.5	37.1	
9.5	57.4	27.9	
7.7	34 36.2	13.9	Sj
9.0	42.6	47.5	
9.5	35 3.8	12.3	
9.8	16.0	0.8	
9.3	17.5	17.2	
9.1	20.7	2.5	L
9.5	27.1	52.0	
9.1	29.4	11.0	M
9.8	29.6	33.2	
9.4	36.8	28.9	
9.3	44.2	11.5	Sj
10	36 29.1	56.5	
9.5	34.3	4.1	
9.3	37 3.8	20.8	
9.5	16.4	44.3	
9.5	17.8	44.1	
9.4	47.4	24.0	
9.3	50.4	25.3	
9.2	56.0	35.8	
9.6	38 16.5	33.0	
9.9	25.9	31.4	
9.8	51.2	54.3	
10	39 30.9	25.1	
9.8	40 13.6	37.5	
7.0	21.1	58.7	B
9.5	22.8	15.8	
8.9	23.5	59.7	B
9.5	35.0	38.2	
9.4	54.5	29.6	
9.3	41 23.6	59.1	
9.1	26.8	5.9	
8.5	31.3	8.8	B
10	41.8	15.7	
9.2	59.8	24.3	
9.5	42 22.8	7.1	
9.4	32.1	52.0	
10	42.7	42.2	
9.9	58.5	22.5	
9.8	59.5	54.9	
9.4	43 16.4	21.3	
9.5	24.6	37.1	
10	32.1	47.9	
8.8	54.2	0.2	
10	55.8	58.0	
9.6	44 24.3	48.3	
9.8	45 16.4	2.9	
9.5	20.9	24.2	
9.4	26.2	44.0	

5781—5840

m	22h—23h m s	—4° ′		
9.1	45 27.1	54.2		
10	41.9	23.8		
9.5	42.2	42.2		
9.5	46 11.8	49.2		
9.4	46.4	34.2		
9.5	47 5.1	50.2		
9.1	22.8	2.5		
9.6	48 15.3	39.1		
9.5	28.2	40.8		
9.4	43.3	13.2		
8.3	49 14.0	17.6	K	
9.5	22.3	54.5		
7.0	37.6	0.9	K	
9.8	50 11.8	1.6		
8.0	22.6	25.6		
8.6	51 9.1	31.9		
9.0	53.6	14.4		
9.7	52 18.1	41.7		
9.8	30.6	34.6		
9.3	46.4	5.8		
9.8	53 3.6	59.7		
9.3	11.7	43.5		
9.5	54 8.6	50.4		
7.8	18.0	37.2	L	
9.4	21.8	14.7		
9.5	23.6	12.0		
9.5	28.1	9.3		
9.0	35.5	37.3	WC	
9.4	55 7.1	46.2	Sj	
9.5	12.0	32.8		
9.0	29.0	35.9	Sj	
9.5	51.0	29.4		
9.1	56 43.4	34.2		
10	57 4.4	20.9		
8.9	10.0	16.2	WC	
9.3	12.3	53.0		
9.1	22.1	31.9		
9.9	26.4	47.9		
9.5	31.4	22.7		
9.4	58 7.8	28.0		
10	8.8	20.9		
8.6	59 10.9	58.9	K	
9.5	27.0	31.2		
9.3	38.0	20.8		
9.7	0 6.1	37.9		
10	6.9	38.6		
9.3	22.0	17.8		
9.4	33.0	14.1		
9.3	1 1.2	52.0		
9.0	46.1	43.1	K	
9.8	46.8	55.2		
9.8	51.0	29.7		
8.5	2 7.7	44.9	K	
9.8	25.5	24.8		
10	28.9	13.8		
9.5	3 10.1	37.6		
8.9	20.3	18.1	Sj	
10	27.7	11.2		
9.5	40.5	30.0		
10	50.0	58.8		

5841—5900

m	23h m s	—4° ′	
8.3	4 43.7	43.4	L
10	5 0.9	34.2	
9.6	6 3.3	43.6	
9.0	10.1	36.2	Sj
9.2	26.2	36.0	K
9.5	41.6	4.4	
9.5	7 8.3	42.2	
9.5	37.6	55.6	
9.5	49.0	19.0	
9.1	57.7	17.0	
9.8	59.0	29.7	
5.3	8 6.4	16.9	K
9.0	9.1	29.5	
9.8	29.7	36.6	
9.8	48.6	33.1	
9.3	9 0.7	12.6	
9.8	31.3	32.0	
10	47.6	56.9	
10	58.1	8.0	
9.5	10 0.1	29.3	
9.5	31.3	51.7	
9.1	36.7	10.5	
10	11 18.9	59.9	
9.3	30.1	32.9	
9.1	40.0	24.9	
10	12 22.0	37.7	
10	43.0	32.4	
6.5	44.8	42.4	Sj
9.8	47.1	0.6	
9.0	57.6	9.1	
9.7	13 20.4	14.5	
9.5	52.1	11.6	
9.5	14 2.6	7.4	
9.5	5.5	20.6	
9.5	15 6.3	21.4	
9.3	12.1	4.3	
9.5	28.3	48.4	
9.5	30.1	20.4	
8.3	55.0	0.4	Sj
9.7	56.7	55.5	
9.0	16 36.4	26.5	R
9.6	17 20.2	25.6	
9.5	18 19.1	16.5	
9.6	19 12.9	39.5	
9.5	41.7	6.4	
9.2	58.9	21.0	
9.8	21 5.2	23.6	
9.7	20.2	39.7	
9.5	24.0	52.9	
8.5	54.2	23.6	L
9.0	22 44.7	7.3	Sj
9.5	47.1	1.7	
9.1	51.3	39.0	
9.5	23 1.5	53.5	
8.9	27.4	55.1	
6.8	24 2.0	52.6	B
8.8	3.8	10.3	
10	33.1	16.4	
10	25 8.1	33.8	
9.7	21.5	16.8	

5764: 30:74 9′7″.1 B_3, Ep. 1871.24

5901—5920

m	23h m s	−4° ′	
10	25 23.6	18.4	
9.9	51.7	25.7	
9.5	55.5	53.4	
9.6	26 12.4	46.5	
9.8	31.9	47.7	
10	32.6	39.3	
9.2	36.1	3.8	
9.5	51.6	46.8	
9.8	27 9.1	12.6	
9.7	24.5	29.8	
8.9	38.9	31.0	K
7.8	46.5	39.3	K
8.9	58.9	14.8	
9.7	28 22.9	59.4	
8.7	55.3	14.6	L
9.7	30 22.6	14.9	
8.5	42.8	33.5	M
9.3	31 6.5	50.7	
9.6	13.7	1.3	
9.6	20.5	48.0	

5921—5940

m	23h m s	−4° ′	
9.5	31 31.0	49.7	
10	49.3	39.2	
9.4	59.3	16.6	
9.4	32 10.4	37.7	
9.8	34.3	25.9	
9.0	36.9	56.5	
9.3	38.1	50.9	
9.5	52.5	49.1	
9.8	33 3.3	23.8	
9.8	11.8	21.1	
10	20.1	20.9	
9.5	39.4	25.8	
9.5	44.9	56.4	
9.1	34 46.3	24.5	
8.8	35 9.0	21.6	M
9.5	21.5	38.8	
9.3	37.8	22.3	
9.5	41.5	40.2	
8.5	36 8.8	7.2	Sj
9.3	12.3	22.3	

5941—5960

m	23h m s	−4° ′	
9.3	36 26.9	24.3	
9.4	40.6	59.3	
9.5	37 3.9	30.8	
9.7	31.3	24.6	
9.5	45.4	30.6	
9.5	38 21.8	5.1	
9.3	28.2	50.2	
9.0	38.9	6.7	
8.8	41.4	12.8	Sj
9.5	55.0	54.1	
9.4	56.9	15.4	
9.4	39 19.7	13.0	
9.5	32.3	3.4	
9.5	45.3	42.4	
8.5	56.6	42.4	
9.5	40 11.4	21.0	
8.5	14.1	20.3	L
9.4	44.0	17.4	
9.0	41 19.5	26.8	Sj
9.5	33.1	44.4	

5961—5980

m	23h m s	−4° ′	
9.0	42 29.4	23.6	
9.6	50.7	15.0	
9.5	59.3	8.5	
9.1	43 35.5	22.0	M
8.0	44 2.4	12.5	K
9.8	5.3	0.9	
8.8	7.1	19.2	Sj
8.8	7.6	17.0	Sj
9.6	47.1	39.6	
9.4	50.0	33.1	
9.1	56.4	12.1	M
9.4	45 28.8	16.8	
9.8	46 31.9	3.8	
9.9	54.5	26.3	
9.1	47 9.7	21.5	
8.8	15.8	15.6	Sj
9.7	32.1	56.7	
9.7	48 3.4	30.0	
10	26.6	56.5	
9.4	45.7	46.7	

5981—6000

m	23h m s	−4° ′	
9.0	48 48.4	18.1	K
9.5	55.3	1.8	
9.4	49 20.9	1.9	
9.8	47.8	36.9	
10	50 13.5	41.5	
9.4	18.1	34.2	
9.4	28.0	24.6	
10	30.9	12.9	
8.7	43.2	47.1	K
10	45.6	41.1	
9.5	55.9	53.4	
8.5	58.0	9.5	K
9.4	51 9.3	55.6	
9.8	11.7	8.0	
9.9	11.9	54.3	
5.2	15.0	21.5	K
9.6	27.2	34.4	
9.4	43.2	39.1	
9.3	50.3	1.9	
9.6	52 40.8	11.1	

6001—6007

m	23h m s	−4° ′	
9.9	52 48.5	51.7	
10	56.4	29.0	
8.3	53 5.9	6.7	K
9.8	31.4	30.0	
9.5	59.3	3.6	
9.2	54 35.8	5.0	
9.2	55 16.1	12.3	

6008—6014

m	23h m s	−4° ′	
10	55 21.5	37.5	
9.5	30.4	11.7	
9.8	31.5	19.4	
9.8	38.5	17.9	
10	46.6	43.3	
8.0	55.2	57.2	K
9.0	56 19.4	13.5	Sj

6015—6020

m	23h m s	−4° ′	
9.4	57 10.9	57.0	
9.8	18.9	13.9	
9.6	21.6	25.9	
9.2	43.8	50.6	
7.8	58 0.0	39.3	K
9.8	22.3	20.0	

6021—6026

m	23h m s	−4° ′	
9.6	58 24.0	5.6	
9.3	59 4.7	39.7	K
9.5	8.6	33.7	
9.3	14.6	34.7	K
8.4	30.0	25.8	M
9.4	30.2	48.9	

Zone −5°

1—40					41—80					81—120					121—160					161—200				
	0h		−5°			0h		−5°			0h		−5°			0h		−5°			0h—1h		−5°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.3	0	0.6	8.0		10	12	9.6	53.0		9.8	25	33.6	47.7		9.8	38	45.6	46.0		9.3	50	54.4	40.1	
8.7		11.1	20.9	K	9.4	13	12.3	8.9		9.5		51.8	45.5		9.5		55.8	18.1		9.4	51	37.2	25.4	
8.6		26.2	39.8	K	9.3		16.5	57.1		7.0	27	5.5	20.6	Sj	9.8	39	16.2	46.8		8.8	52	11.9	53.0	K
9.4		44.4	56.4		9.7		40.1	49.5		9.3		6.1	20.6	K	7.9		17.6	12.5	B	10		13.9	39.5	
10	1	4.0	7.2		9.9		55.3	16.7		9.3		11.4	23.9		9.4		49.7	52.4		8.3		19.8	14.5	L
9.0		14.2	39.0		9.5	14	5.3	21.6		9.4		30.1	58.8		9.5	40	10.6	13.9		7.8		21.2	6.1	Sj
10		38.9	43.5		9.5		25.3	13.3		8.9	28	35.2	50.7		9.5		11.2	50.1		9.5		22.5	56.0	
10		45.4	40.7		9.8		42.8	14.0		9.2		43.5	0.7		9.2		15.7	17.7	K	8.3		31.5	58.2	K
10		48.8	4.7		7.0		50.1	59.9	K	10	29	24.6	53.8		9.8		30.6	2.5		10		47.7	34.0	
9.2	2	4.6	28.9		9.5	15	10.3	34.3		9.5		53.1	58.6		9.3		34.3	59.0		10		56.8	14.0	
9.9		21.0	50.7		9.0		15.3	18.6		9.1		57.9	7.6		9.8		43.1	25.5		7.5	53	39.8	25.6	K
9.4		47.3	44.0		9.8		47.8	14.8		10		59.7	32.5		9.8		46.2	34.1		9.0		55.3	11.8	K
10		47.9	12.8		9.2		49.9	22.4	K	10	30	2.1	27.6		10	42	3.2	32.5		9.0	54	7.8	13.1	K
9.4		53.7	36.1		9.5	16	7.2	4.8		9.0		26.0	21.2	Sj	8.5	43	0.8	55.1	K	9.7		51.3	28.2	
9.5	3	13.2	30.3		9.4		14.8	8.8		8.8	32	17.9	42.7	K	9.9		25.1	12.4		9.5	55	35.0	31.3	
9.7		23.8	1.2		8.6		50.3	18.2	K	10		19.2	3.2		9.2		26.6	5.3		9.5		41.7	2.7	
8.2	4	10.4	52.4	K	9.8	17	4.9	47.6		9.7		29.1	51.9		9.6		34.7	40.7		5.3		41.9	36.7	K
9.5		11.6	2.1		7.8		7.8	27.0	K	10		40.8	10.5		7.2		46.1	49.4	K	9.8	56	20.6	42.2	
9.8		53.2	39.4		9.0		25.6	4.5	K	9.8		59.2	48.5		8.5		49.9	58.3	K	9.0		27.0	1.7	Sj
9.9	5	7.7	29.3		8.5		35.4	19.1	B	9.0	33	14.1	8.5	K	9.3	44	1.6	28.8		9.4	57	0.4	22.4	
9.8		36.3	31.1		8.9		53.4	10.8	K	6.3		19.1	8.9	K	9.8		2.3	52.7		10		26.1	18.8	
10		46.5	40.6		10	18	12.5	48.8		9.4		21.5	26.6		9.5		27.4	3.6		10		38.0	1.3	
8.9	6	2.2	27.1	Sj	8.8	19	35.9	13.0	K	9.7		26.9	43.8		9.8		47.7	59.5		10		54.1	59.2	
9.8		16.1	0.4		7.0		41.4	48.3	K	9.1		30.1	2.7	K	9.6	45	4.2	21.8		9.9		59.1	58.2	
9.9	7	33.3	35.5		9.5		55.9	43.1		8.7		34.0	21.8	Sj	9.5		4.4	54.6		9.2	58	37.9	42.8	K
9.1		59.2	20.1		9.6	20	3.1	23.0		9.8		58.6	30.9		9.4		27.4	46.6		8.2		38.2	4.5	Sj
8.7	8	9.7	49.0	Sj	10		45.6	9.3		8.3	34	7.1	1.8	Sj	6.5	46	17.7	18.4	L	9.8		58.0	50.5	
10		11.7	13.5		9.8	21	14.4	15.7		9.5		17.8	15.3		9.3		26.2	15.0		10	59	6.6	58.2	
9.2		24.2	17.7		8.8		16.9	37.5	K	10		21.7	52.5		10	47	24.8	53.2		8.0		24.8	25.3	K
10		52.5	56.7		9.1	22	7.4	42.8		9.5		39.5	22.5		9.2		54.7	24.9		7.8		37.2	40.9	K
9.1	9	13.7	47.3	Sj	9.5		34.6	59.9		9.8	35	20.8	20.1		9.8	48	1.3	26.4		10		54.9	34.3	
9.8		27.8	18.5		9.9		46.8	5.0		9.8		50.2	55.4		10		4.0	21.8		8.0	0	22.9	31.3	K
9.7		34.1	40.4		10	23	14.9	13.3		9.8	36	12.0	29.2		9.8		13.8	29.1		9.5		25.4	21.7	
9.5		39.7	40.3		9.8	24	8.5	36.8		10		31.1	12.2		9.4		24.5	57.5		9.5	1	1.4	8.1	
8.5		50.8	15.2	Sj	8.0		9.0	4.9		10		55.7	58.0		9.3		26.2	19.0		8.0		31.9	29.6	Sj
9.6	10	47.1	5.3		9.8		9.4	43.7		8.5		56.6	11.3	K	9.8		59.9	53.8		9.5		39.5	44.2	
9.5	11	8.3	36.1		8.6		42.5	58.8	Sj	9.7	37	15.7	52.1		9.5	49	18.8	42.4		10		41.1	8.6	
9.5		41.7	4.3		9.0		57.0	16.4		9.7		19.7	37.8		10		35.9	39.9		8.3		56.0	45.0	K
9.8		44.2	31.4		10	25	3.0	38.3		8.8		57.3	48.2	K	9.1	50	3.9	6.7		8.5	2	19.0	48.1	K
9.0		47.7	51.3		9.8		15.5	38.0		6.5	38	0.6	25.3	Sj	8.5		31.7	1.8	Sj	9.0	3	8.0	44.3	K

124: 17ˢ.87 12′40″.2 B_4, Ep. 1871.99

201—260					261—320					321—380					381—440					441—500				
	1h		−5°			1h		−5°			1h		−5°			1h—2h		−5°			2h		−5°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.0	3	16.9	7.2		8.8	20	29.9	13.6	K	9.5	41	41.2	12.6		7.5	56	7.8	1.4	L	9.8	13	3.5	7.6	
7.3		22.9	36.8	K	9.8		45.0	30.1		9.2	42	20.2	7.9		8.1		31.5	16.6	K	9.2	14	3.2	18.2	B
9.7		25.4	10.6		10		57.9	16.5		8.5		36.4	35.1		9.8		34.3	35.6		9.2		11.8	27.7	
9.8		35.1	35.9		9.9	21	34.2	40.7		9.0		42.0	55.0	Sj	9.8		36.6	19.1		9.1		12.3	50.0	
9.0		57.0	12.8	Sj	9.5		43.7	45.9		9.2		49.7	58.5		10		58.2	7.0		9.8		18.5	49.8	
10	4	7.7	21.0		9.0	22	7.0	32.5	K	9.8	43	5.5	49.4		8.3	57	51.3	5.7	K	9.8		41.3	26.5	
8.5		47.9	15.7	K	9.1		32.8	52.3		8.6		19.7	40.9	K	9.2	58	26.1	2.3		9.0		43.1	10.6	R
9.5	5	12.6	45.1		9.1	23	10.8	18.9		10		47.8	4.9		7.3		57.4	3.2	Sj	9.5	15	20.1	56.8	
9.5		48.1	38.8		9.5		13.1	35.6		9.8	44	35.1	36.5		9.4	59	11.1	48.5		9.8	16	29.4	29.3	
7.3	6	31.0	36.9	K	10		36.4	26.5		9.4		38.0	40.7		9.5		24.9	6.5		9.5		49.0	2.7	
9.5		36.2	58.1		7.2		39.9	42.3	K	9.7		46.2	49.7		9.5		58.4	54.7		9.8	17	5.4	42.2	
9.7		49.2	8.1		10	24	23.2	59.5		9.6	45	9.3	12.8		9.8	0	10.2	29.4		9.8		26.1	5.1	
9.3		49.2	26.4		8.3		28.5	42.3	K	8.7		28.0	30.5	Sj	8.8		42.6	40.6	K	8.5		51.3	24.5	K
9.7	7	3.2	11.7		9.8		54.0	31.3		9.5	46	2.1	33.6		9.3		49.7	32.2		9.5		52.6	52.6	
7.5		10.9	48.6	Sj	9.2	25	11.3	7.0		9.5		18.6	33.3		9.8	1	3.3	38.9		9.9	18	28.2	25.3	
10		28.0	31.5		9.5	26	12.1	45.6		8.6		33.7	59.2		9.8		7.1	27.2		9.4		50.9	13.0	
10	8	7.0	9.7		9.8		32.6	39.4		10		50.0	54.3		9.4		57.7	42.5		9.1		53.9	45.1	
9.0		17.9	22.2	K	9.5		33.2	28.4		9.9		50.7	50.8		9.8	2	21.6	36.4		9.3	19	25.8	30.7	R
9.6		25.3	8.0		9.5		44.1	35.4		9.7	47	3.5	6.8		9.8		31.8	33.9		9.1		46.0	49.7	
9.0		26.9	31.6		9.5	27	4.3	55.4		9.1		8.1	53.6		9.8	3	34.2	43.4		9.1		57.8	6.2	
8.4		48.4	43.0	K	9.0		20.4	19.9		9.5		32.9	14.7		10		46.3	26.0		9.1		58.8	18.5	
9.5		57.8	12.7		9.1		26.0	59.4	K	9.4		44.2	37.8		8.8		48.9	17.3		9.8	20	18.5	19.1	
8.2	9	10.3	37.5	K	9.8		43.6	38.1		9.5	48	21.6	33.4		9.0	4	31.3	46.6		9.0		29.5	40.8	
10		11.7	21.7		9.4		56.0	2.6		9.4		34.1	35.2		8.7		35.9	2.9	Sj	9.8		38.9	32.3	
9.0	10	18.0	34.6	Sj	8.0	28	21.5	49.3	K	10		42.7	53.1		9.5		51.0	10.8		9.8		44.0	36.1	
8.5		39.4	5.7	R	10	29	17.4	41.6		9.2		53.2	43.3	K	9.6	6	7.6	55.0		9.5		52.7	20.3	
10		42.6	34.6		8.6		23.9	3.0	Sj	9.5		57.4	9.9		9.8		9.8	42.6		8.5	21	7.2	56.1	K
10		44.5	12.7		9.3		26.0	44.6		9.2	49	2.4	40.0	R	9.5		18.6	39.2		10		11.7	59.8	
9.5		45.5	39.5		9.8		56.5	21.6		9.3		20.1	40.8		9.0		43.8	43.4		9.4		52.0	11.1	
9.8	11	7.8	58.8		9.2	30	2.7	39.3		9.8		21.1	46.0		8.8		44.0	32.4		9.8	22	14.0	35.6	
9.1		17.5	25.9		9.6		49.4	47.4		10		45.2	36.2		7.7	7	7.4	56.8	K	7.5	23	11.6	40.9	Sj
9.8		34.4	9.0		9.5	31	2.9	10.8		9.3	50	21.7	4.3		10		28.2	44.3		9.2	24	6.7	26.0	
9.4		39.3	57.9		9.8		7.2	38.6		8.8		22.2	56.2	K	9.1		37.1	15.3		9.3		16.5	45.0	
9.2		50.5	25.3		9.0		19.3	42.6		10		29.0	24.8		10		38.1	35.0		9.7	25	2.7	38.9	
9.2		54.5	29.8		9.8	32	45.9	10.5		9.8		35.8	43.3		10		49.0	40.4		9.6		45.9	5.1	
10	12	5.2	47.4		8.4	33	4.0	12.0	Sj	9.5		37.2	51.5		9.2	8	19.1	44.7		9.7		59.0	37.1	
8.9		7.1	35.6		8.7		26.0	18.7	K	8.2		48.3	0.4	Sj	8.1		38.8	45.4	K	9.6		59.1	58.2	
8.3		12.1	40.4	Sj	9.6		56.0	52.8		9.4	51	5.1	53.1		9.5		53.0	9.2		10	26	7.9	7.4	
10		22.2	30.0		9.6	34	1.0	56.2		9.3		31.6	31.0	R	9.5	9	5.1	32.7		9.8		58.9	6.7	
9.5		23.7	43.0		8.5		45.4	40.8	K	9.7		32.5	22.3		9.1		10.4	52.3		9.5	27	18.6	47.8	
9.8	13	9.6	53.6		9.1		58.8	3.9	K	8.5		48.0	24.2	K	9.0		23.5	56.3	K	9.2		27.0	42.3	
9.7		17.8	48.2		9.5	35	10.7	32.8		9.9		57.2	44.2		9.0		25.0	30.8		9.5		34.5	4.4	
9.5	14	1.5	37.5		10		18.7	47.9		9.9	52	0.6	32.1		10		20.5	57.4		9.3		41.6	49.3	
9.5		5.7	20.7		8.7		29.1	4.3	Sj	10		10.2	17.5		9.4		27.6	17.4		9.5	28	19.8	23.8	
9.5		5.8	57.0		8.8	36	2.5	51.2		8.9		51.3	23.8	K	8.5	10	33.9	1.5	K	9.9		26.2	24.5	
9.4		11.9	59.0		9.0		11.4	1.4		9.5	53	10.5	41.4		9.5		48.5	56.8		9.7		49.3	58.2	
8.2		47.0	19.4	K	9.8		23.5	8.7		9.8		16.4	18.1		9.2		57.4	38.6		9.0		58.0	7.3	K
9.1		53.6	35.4		9.5		30.8	0.6		9.4		26.2	46.1		9.5	11	1.3	40.4		9.8	29	30.2	0.9	
9.2	15	10.5	41.9	K	6.5		36.2	29.9	K	9.8		32.0	50.4		8.7		9.2	0.0	Sj	9.0		42.5	10.6	Sj
9.1		55.8	41.7	Sj	9.5	37	27.5	50.0		9.7		36.6	43.8		8.2		14.8	32.3	K	9.3	30	11.9	5.3	
10	16	56.1	36.4		9.7		54.3	45.5		9.1		48.1	29.2	K	9.0		16.4	35.4	R	8.6		17.5	43.2	K
9.5		58.0	24.1		10	38	17.1	19.1		8.5	54	5.1	30.0	K	9.7		17.6	16.6		9.4		43.4	18.0	
9.7	17	9.2	52.2		9.5		23.8	41.2		9.8		20.8	6.2		9.4		20.1	14.0		9.1		50.6	51.1	
8.5	18	1.0	47.0		9.4	39	32.3	42.0		9.0		29.3	56.3	K	9.8		51.7	18.9		9.5	31	34.2	58.7	
9.5		4.1	3.1		9.9		37.0	31.0		10		38.6	30.2		9.3		57.5	4.8		9.5		42.5	48.6	
9.6		39.3	32.5		9.8		50.0	25.7		9.9		54.8	59.6		9.8	12	9.0	49.4		9.3		48.3	7.0	
9.7		48.6	8.7		9.6		53.5	40.2		9.8		58.0	26.6		8.8		23.1	40.3	K	9.5	33	7.4	33.3	
7.8	19	0.7	25.3	Sj	9.9	40	13.0	46.3		9.0	55	13.4	10.4	Sj	7.0		24.3	0.6	K	8.4		20.1	38.8	K
9.7		19.8	32.4		9.5		51.2	8.4		9.5		33.5	2.8		9.1		28.5	41.8	K	9.0		23.8	1.5	
9.4	20	5.5	31.9		9.5		51.6	3.2		9.0		55.0	17.5	K	9.5		29.6	13.4		9.8		38.7	21.1	

501—560					561—620					621—680					681—740					741—800				
	2h		—5°			2h—3h		—5°			3h		—5°			3h		—5°			3h		—5°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.3	33	59.3	23.2	K	9.8	54	8.0	17.7		9.8	13	34.7	55.3		9.8	24	25.3	57.0		9.6	39	16.0	51.8	
9.7	34	18.0	37.2		9.4		13.3	36.9		9.9		40.9	22.2		9.7		50.8	37.7		9.6		16.6	3.5	
9.7		19.9	32.1		10		38.2	32.0		9.4	14	12.6	53.9		10	25	44.2	18.9		9.5		24.7	54.8	
9.7		24.6	4.7		9.5	55	21.9	53.1		10		23.4	24.7		9.1	26	0.0	6.4		10		38.0	45.2	
9.3		46.1	35.8		9.1		34.4	12.5		8.5		33.0	41.0	K	9.7		7.8	46.3		9.6	40	11.1	0.8	
9.7	35	1.8	43.7		8.8		53.3	36.4		9.0		36.1	58.3		9.4		50.8	55.8		9.0		14.9	2.9	
10		55.3	25.5		9.4	56	40.8	44.1		9.1		43.0	37.5	K	8.8	27	1.5	32.9		10		32.2	37.4	
9.6	36	54.7	39.5		7.0		53.9	48.6	K	7.7		59.3	39.8	Sj	9.8		24.2	45.7		8.9		35.2	21.7	K
8.5	37	6.6	8.2	Sj	10	57	27.1	22.5		10	15	4.6	0.0		9.5		24.6	19.3		7.5		36.4	17.3	Sj
9.5		22.2	11.0		9.2		42.2	42.7	K	9.6		20.4	28.3		9.4		27.4	29.0		9.0		42.0	54.0	
9.8		38.8	16.3		10		43.7	54.2		10		33.7	55.2		9.8		27.9	58.9		10	41	19.8	58.7	
9.8	38	17.7	8.4		10		52.0	17.8		10		35.1	39.7		9.4		29.2	53.7		10		59.9	28.0	
9.5		36.1	9.0		10	58	5.2	5.4		9.8		52.6	8.2		9.8		43.1	7.2		9.5	42	24.2	42.2	
7.7		45.0	33.6	K	9.5		44.9	39.1		9.3	16	20.5	33.6		9.3		45.4	40.9		10		29.3	18.9	
9.1	39	20.8	17.1		9.4		52.3	7.6		10		46.3	28.2		8.5		55.3	23.3	Sj	9.0		32.4	43.8	K
9.3		34.2	11.0		10	59	20.3	7.3		9.1	17	2.6	51.4		6.5	28	46.5	36.5	K	9.7		32.8	38.9	
9.8		34.7	22.6		9.3		30.9	13.5		9.5		30.9	25.5		9.0		53.9	29.4	K	9.0		55.5	53.6	
10	40	58.9	55.7		9.0		36.1	22.0		10		34.9	40.6		9.8	29	15.7	17.0		8.2	43	9.5	31.1	Sj
8.3	41	7.0	29.0	K	8.2		36.4	36.7	K	8.8		40.7	13.5		9.3		31.4	30.0		9.1		12.7	12.3	
9.7		8.5	5.8		9.8		52.3	7.5		9.6		41.5	41.2		9.0		36.5	9.9	B	9.2		18.5	28.0	K
8.3		9.3	31.4	Sj	7.8	0	7.5	56.6	K	9.1		48.9	38.3		9.0	30	3.1	8.3	Sj	9.8		27.8	17.7	
9.7		24.0	3.7		9.5		41.2	26.7		7.9		51.5	51.0	Sj	9.6		3.8	4.5		8.0		29.5	3.1	Sj
9.4		27.2	15.5		9.3		51.4	51.0		10		59.0	32.1		9.5	31	9.2	46.4		9.2		59.8	13.0	
7.7		41.7	46.6	K	9.0		55.7	26.4	K	7.0	18	7.0	10.1	K	9.8		13.1	45.5		9.5	44	13.9	19.7	
9.8	42	18.7	51.0		9.4	2	21.9	4.4		10		15.1	53.8		9.5		39.4	56.6		9.4		32.1	29.1	
9.3		44.0	25.2		9.1		24.9	5.7		9.0		15.3	3.8		9.4		42.3	52.5		10		34.6	0.8	
8.6		46.8	18.7	K	9.3		41.4	51.8	K	9.8		26.2	59.4		9.3		44.8	18.7		9.8	45	7.7	9.9	
7.2	43	8.2	35.1	Sj	9.6		46.3	1.5		9.6		29.1	33.2		9.7	32	14.9	44.5		7.0		20.5	29.5	K
9.3		31.7	2.9		8.6		51.1	54.5	K	9.7		46.0	32.3		10		20.8	36.8		5.7		32.1	47.8	K
9.4		33.7	12.1		9.5		58.5	51.0	K	9.8		52.1	45.4		10		27.8	20.2		9.4	46	1.2	8.5	
9.3	44	12.1	49.5		9.5		58.9	49.9		9.5	19	1.4	14.6		8.9		47.0	34.9	Sj	8.9		22.0	27.2	K
8.9		14.1	6.9	Sj	7.8	3	26.6	56.5	K	9.2		7.0	20.4		9.4		49.3	19.8		10		34.3	17.4	
9.9		46.7	52.0		9.5		55.0	14.5		9.3		7.6	3.5		9.8		55.5	0.8		9.5	47	44.2	49.0	
9.6		54.0	32.9		9.5	4	16.4	33.7		9.5		8.7	23.6		9.3	33	2.1	36.8		9.5		50.5	38.0	
9.5	45	31.0	56.5		9.4	5	18.9	9.8		9.4		10.0	4.2		5.5		27.5	40.8	Sj	8.2		59.6	24.4	K
7.3	46	0.2	50.8	Sj	8.3		37.5	40.5	K	8.8		24.3	58.5		9.5		38.9	22.2		9.6	48	34.0	51.8	
9.8		24.3	39.3		9.0	6	23.9	0.7	K	9.6		28.5	18.5		9.1		53.6	50.3	K	9.6		51.4	1.6	
9.6		50.3	42.6		8.8		39.5	3.3	K	9.5		46.8	17.8		8.5		59.2	45.5	K	9.2	49	4.1	25.4	
9.5		55.8	48.5		9.7		50.4	36.1		9.5		47.5	40.5		9.1	34	6.8	19.0		8.5		6.6	34.5	Sj
9.1	47	5.7	8.4		8.3	7	12.6	40.8		9.0		49.2	15.4	K	10		19.5	32.6		9.7		27.0	46.9	
7.0		26.4	55.3	K	8.5		56.1	19.4	K	9.4		50.9	51.2		8.6		33.5	42.5	K	9.5		33.8	3.3	
9.0	48	5.4	18.1	K	9.6	8	16.0	43.5		9.1		54.7	54.5	K	9.9		40.6	36.2		10		57.5	2.1	
9.8		12.3	14.0		9.8		39.3	40.4		9.4		56.6	48.4		9.7	35	9.8	39.2		9.4		58.9	19.7	
10		15.3	39.3		9.5		41.9	38.1		9.1	20	6.0	24.3	K	7.7		31.7	3.9	Sj	9.8	50	18.7	49.4	
9.4		23.6	28.8		9.8	9	4.2	13.5		9.9		29.1	33.2		9.4		32.3	21.5		9.0		25.6	59.2	K
8.0	49	29.4	56.4	Sj	9.1		8.6	40.7		9.4		57.8	55.1		10		56.6	9.9		9.2		36.5	23.0	
9.6		50.8	5.7		9.5		46.0	3.5		9.3	21	5.9	59.4		9.5	36	19.9	7.9		8.5		57.9	19.2	K
9.7	50	12.5	21.8		9.8	10	1.1	37.9		8.2		8.7	4.1	Sj	9.7		21.1	8.8		10		58.1	27.7	
9.8		14.6	2.1		9.2		20.8	23.6		9.3		41.1	31.0		8.8		28.8	18.5	K	6.0	51	43.7	52.7	Sj
9.3		20.2	42.8		9.8		23.9	22.4		10	22	1.8	48.6		9.1	37	4.4	39.3		9.5	52	2.3	54.6	
8.6		23.7	56.6		9.4		32.7	8.3		9.8		21.6	23.9		9.3		22.2	40.3		9.5		19.8	35.9	
9.5		23.8	52.8		9.8		38.1	51.3		8.3		55.6	21.4	K	9.7		29.5	42.9		9.8		46.1	49.4	
8.5		42.4	18.2	K	9.8		55.0	29.3		9.7	23	16.4	44.3		9.9		42.7	24.7		10	53	29.8	40.0	
7.3	51	54.5	21.4	Sj	9.4	11	9.2	14.1		5.0		25.2	34.4	K	10		56.6	29.2		10		33.6	31.5	
9.8		57.3	34.2		9.1		9.6	1.2	K	9.9		30.9	13.3		9.8	38	1.5	29.8		8.8		49.0	7.6	Sj
9.4	52	2.8	50.8		9.8		28.3	18.8		9.5		30.9	27.9		9.2		16.7	48.1		9.5		59.1	56.4	
9.4		16.0	59.5		9.5		35.3	16.1		9.5		34.5	17.2		10		31.0	46.5		9.4	54	8.1	32.5	
9.5		31.7	36.5		8.7		45.8	16.1	K	9.3		53.0	1.0		9.0		42.8	45.7	K	9.6		10.9	14.2	
9.8	53	58.4	55.2		9.7	12	56.8	2.9		9.4	24	9.2	33.2		9.5		54.0	25.7		10		32.7	18.6	
9.8	54	7.9	58.6		9.3	13	24.4	29.3		9.3		17.7	54.3		9.3		56.7	7.1		9.4	55	7.5	15.9	

801—860				861—920				921—980				981—1040				1041—1100			
3h—4h		—5°		4h		—5°		4h		—5°		4h		—5°		4h		—5°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.9	55 28.0	21.3		10	8 32.1	48.8		9.2	20 5.1	51.7		7.8	31 56.5	5.9	K	9.8	41 1.9	37.7	
9.8	31.2	19.3		10	40.6	48.4		9.3	6.9	58.4		9.0	32 15.9	15.7		9.2	17.0	48.2	
8.6	33.7	35.0	K	9.0	9 2.7	22.1		9.3	22.4	10.8		9.0	17.4	14.0		9.8	26.5	42.7	
9.5	35.8	39.7		9.0	7.1	43.1		9.4	31.0	48.0		8.5	19.8	10.9	K	6.3	26.7	55.5	Sj
9.0	56 7.5	5.7		9.0	8.7	57.0		9.0	21 3.5	40.9	Sj	9.8	34.7	3.5		9.5	34.3	33.0	
9.1	14.6	23.4		9.5	22.8	57.2		9.7	5.7	38.8		9.2	39.8	4.3		7.5	42 4.4	14.5	
10	15.2	1.5		9.8	23.6	11.4		9.4	45.4	8.2		10	41.7	17.2		9.0	11.3	37.5	K
9.5	25.8	6.2		9.5	38.1	11.6		8.5	22 11.4	59.8	K	9.5	43.6	52.1		9.8	13.5	19.8	
9.6	43.5	43.9		9.1	10 29.8	41.0		8.8	12.6	50.1		9.4	46.0	17.8		9.4	47.2	29.9	
7.0	51.2	0.2	Sj	9.2	31.3	47.2		9.1	24.2	35.5		9.3	33 10.3	12.1		8.5	43 2.7	27.7	Sj
9.5	53.4	10.0		8.3	35.8	30.6	Sj	9.3	33.1	1.8		9.9	14.5	20.7		9.2	2.8	32.4	K
9.0	57 8.4	3.9		9.8	47.6	47.2		9.5	36.7	38.2		9.7	26.2	37.0		9.6	4.1	33.2	
9.2	14.6	44.2		9.3	50.7	55.2		9.8	42.7	41.1		9.1	56.1	26.6		9.6	22.3	43.7	
9.1	22.9	37.0		8.9	11 0.2	10.5		10	46.9	22.5		9.1	58.9	1.9		9.4	24.4	15.3	
9.2	29.2	30.4		10	0.9	5.1		9.3	23 5.5	28.5		9.5	34 13.8	39.8		9.3	38.8	2.8	
8.0	53.9	10.6	Sj	9.0	25.3	20.4		9.8	13.2	48.8		10	25.2	20.1		9.3	40.4	59.7	
9.8	57.9	52.1		9.8	33.5	12.6		9.4	34.8	13.7		9.5	25.6	24.1		9.6	41.9	35.4	
9.3	58 6.8	35.9		9.8	12 8.1	14.9		9.1	37.3	17.9	K	9.5	37.2	45.5		9.5	50.4	58.7	
9.5	11.2	31.4		9.7	46.5	39.4		9.4	48.9	50.0		9.4	35 6.2	31.9		8.8	55.1	52.7	Sj
9.1	17.0	15.8		9.6	13 30.4	35.6		9.4	50.9	22.4		9.5	11.3	55.0		9.8	44 13.0	45.5	
9.0	33.3	49.0		9.4	34.4	35.0		7.8	51.8	16.7	Sj	9.4	12.3	43.6		9.8	31.7	36.1	
8.7	42.5	33.3	K	9.6	47.6	30.9		7.5	24 3.7	10.8	K	9.8	27.5	16.2		8.2	34.1	37.0	K
10	48.7	59.8		8.5	55.8	54.4	Sj	9.5	20.9	22.4		9.8	30.0	6.2		8.9	50.8	33.0	K
9.5	49.9	37.5		9.4	59.4	8.5		9.4	21.8	50.0		9.3	37.7	30.5		10	45 7.9	40.9	
10	59 33.5	51.8		9.8	14 6.3	1.2		9.4	23.7	40.3		9.5	48.7	2.7		8.9	9.7	1.9	
9.8	41.1	24.3		9.7	11.0	48.9		9.3	27.2	37.2		9.3	57.9	12.9		9.6	25.2	42.4	
9.3	42.6	7.4		9.5	45.9	0.2		9.8	59.8	41.4		8.8	36 3.2	1.7		8.0	37.8	31.5	L
9.5	0 11.1	54.7		9.5	49.9	49.9		8.0	25 12.4	21.2	K	9.3	10.4	48.1		4.3	46.0	41.7	Sj
9.6	37.4	41.8		7.1	59.4	1.4	K	9.8	30.7	35.3		10	16.4	40.6		9.9	49.3	57.5	
9.3	1 1.2	26.8		9.4	15 22.3	40.9		9.5	50.2	34.0		9.2	28.3	42.6		9.4	46 1.6	46.6	
10	9.4	44.7		7.8	26.2	14.4	Sj	9.5	26 6.9	41.2		8.8	35.2	24.0		9.9	6.9	21.0	
9.5	17.6	54.1		9.3	26.5	51.2		9.4	26.9	18.7		9.8	42.3	57.4		9.6	18.6	47.5	
8.2	27.9	10.0	Sj	9.4	39.7	38.8		7.0	35.3	36.7	K	9.3	37 9.8	56.3		9.6	21.3	49.4	
9.2	35.9	2.9		10	43.1	7.4		9.5	57.2	10.0		9.2	12.7	24.8		9.4	22.7	24.3	
9.8	51.8	31.0		7.5	16 4.9	21.2	K	9.0	27 1.3	23.9	B	9.1	13.4	29.8	Sj	9.6	28.2	46.6	
8.8	54.6	5.8	K	10	16.6	5.9		9.0	10.8	4.4		9.6	16.1	29.6		9.6	39.4	36.0	
9.0	2 5.1	21.0		9.1	25.5	54.7		8.0	20.3	26.5	K	10	55.6	38.1		9.7	55.0	26.9	
9.6	22.1	23.6		9.9	31.7	13.8		9.8	37.7	56.5		9.2	58.8	48.1		9.6	55.9	34.5	
9.8	49.2	28.7		9.4	55.6	30.5		8.9	38.5	44.8		9.5	38 5.2	52.7		7.8	47 19.4	39.6	Sj
9.6	3 25.8	1.8		9.5	17 12.7	13.0		9.5	50.7	22.5		9.3	21.1	28.0		9.1	28.1	22.8	
7.3	33.3	15.0	L	8.8	14.0	51.4	K	9.4	58.8	58.9		9.5	23.6	28.0		9.0	45.6	19.6	
10	37.4	29.1		9.1	16.8	49.2	K	8.8	28 0.0	8.5	K	8.9	25.2	49.3		9.4	48 7.9	4.7	B
7.8	56.4	39.2	K	8.3	25.7	13.0	Sj	8.0	10.8	2.3	K	9.1	29.7	50.4	K	9.5	9.2	29.5	
10	4 5.2	28.5		9.8	36.5	25.0		9.9	33.4	17.1		9.2	43.1	21.1		9.5	10.8	33.1	
9.4	26.5	45.2		9.8	39.6	31.8		9.9	43.7	58.8		9.3	43.7	49.3		9.4	15.0	13.0	
9.6	40.0	37.0		7.5	18 10.7	59.3	K	9.2	29 4.2	34.6		9.6	59.2	48.0		9.0	16.1	22.0	
9.5	40.9	38.9		8.8	14.9	19.4		9.5	5.5	44.8		9.7	39 14.1	25.0		9.5	51.6	16.2	
9.0	5 5.7	57.6		9.7	17.2	33.7		9.5	6.5	14.2		9.0	15.5	31.4	Sj	8.2	56.9	33.7	Sj
9.2	24.5	5.2		7.8	26.5	25.0	K	9.5	9.7	7.1		9.8	17.5	42.2		9.5	57.4	42.7	
9.3	30.1	16.1		8.8	28.7	34.6		9.8	29.1	31.6		9.4	26.4	45.5		9.1	59.0	17.7	
10	57.6	58.3		8.0	31.1	3.6	Sj	9.4	30.8	5.6		9.3	33.0	51.6		5.3	49 15.2	24.1	K
9.2	6 0.2	47.9		7.3	34.6	29.1	K	10	40.8	46.5		9.0	35.5	19.6		8.9	18.6	18.9	K
9.5	39.7	23.3		9.8	19 3.0	12.0		9.8	30 18.7	36.5		9.3	47.6	25.0		9.0	19.7	23.9	K
9.7	7 1.9	50.8		10	4.9	20.9		10	25.9	14.0		9.5	58.8	36.4		9.9	26.7	49.1	
9.1	25.3	31.7		9.5	29.8	45.2		8.8	30.3	48.5	K	9.3	40 0.5	15.2		8.2	35.5	0.8	L
9.5	27.8	31.6		10	32.5	28.3		9.1	31 0.2	50.3		9.6	0.9	15.9		9.9	39.9	8.2	
8.4	42.8	45.7	K	8.0	35.1	15.8	K	9.5	4.6	29.5		9.3	17.7	31.5	Sj	9.4	50 9.4	57.7	
9.8	8 7.4	11.8		9.4	49.3	5.1		8.2	19.9	40.9	K	9.8	30.6	48.1		9.9	10.3	54.7	
9.0	23.5	5.6		9.2	49.8	13.8		9.5	22.3	8.0		9.5	40.9	58.6		9.1	12.2	58.3	
9.0	24.9	12.0	K	9.0	55.2	14.0	K	9.1	35.4	40.9		9.2	52.0	14.8		10	19.9	7.9	

1101—1160

	4h—5h	—5°	
m	m s	′	
9.3	50 27.1	22.5	
9.0	31.4	58.3	L
9.3	33.7	58.3	
9.5	36.5	14.4	
8.9	47.4	36.0	
8.9	54.0	0.4	K
9.5	54.4	8.1	
9.5	57.7	34.4	
9.0	51 4.2	29.0	
9.5	36.8	54.6	
9.8	39.7	24.0	
9.4	52 1.6	5.5	
9.6	40.5	2.2	
8.7	42.6	22.4	Sj
9.5	52.5	16.6	
10	53 3.9	43.1	
10	7.1	9.9	
9.0	8.2	25.5	
9.0	11.6	16.3	
9.3	21.0	41.9	
9.9	24.2	56.7	
9.3	31.9	9.9	
6.3	37.6	55.8	Sj
9.0	54 18.4	54.6	K
8.5	20.7	25.7	Sj
9.1	23.1	44.7	K
9.9	25.0	43.9	
9.1	35.7	24.4	
9.1	53.0	14.5	
7.2	53.7	42.8	K
10	55 8.4	10.5	
9.0	15.0	38.9	K
9.8	17.4	7.8	
9.7	26.2	0.9	
8.8	38.4	55.0	K
9.5	56 15.6	11.1	
10	15.7	21.0	
8.7	27.8	21.8	Sj
9.4	44.4	53.9	
9.5	57 12.8	25.9	
9.1	16.6	10.8	
9.3	29.4	54.0	
9.5	42.7	29.6	
9.7	53.2	47.9	
9.1	58.9	24.1	
9.4	58 21.4	4.5	
9.1	31.4	21.1	
9.7	53.4	10.8	
9.5	55.4	52.9	
9.5	57.9	12.2	
9.0	59 11.4	48.9	
9.4	17.5	32.0	
9.8	27.3	4.9	
9.2	31.4	49.4	
9.3	33.4	56.5	
8.0	46.2	21.5	Sj
9.5	53.1	34.6	
9.5	0 2.1	23.0	
9.5	20.6	35.9	
9.5	28.3	48.0	

1161—1220

	5h	—5°	
m	m s	′	
9.0	0 35.3	40.9	
3	43.0	16.3	Sj
9.5	50.5	53.3	
9.5	1 1.8	5.1	
9.5	4.0	58.2	
9.0	9.1	28.4	
9.5	28.2	39.6	
9.0	46.9	10.9	K
9.0	2 11.1	24.8	
9.3	26.1	30.4	
9.4	27.7	44.3	
8.8	31.2	44.3	K
9.3	35.1	27.5	
8.7	41.2	42.1	K
9.7	56.1	28.2	
9.2	58.2	58.3	
8.8	3 27.2	7.5	Sj
8.5	40.0	21.1	Sj
9.0	58.3	47.0	
9.5	4 5.9	11.4	
9.5	7.1	29.7	
9.2	19.4	52.0	K
9.6	30.5	13.5	
9.5	5 22.3	43.4	
9.5	27.0	20.2	
9.5	44.0	15.8	
9.3	58.4	3.7	
9.3	6 3.4	49.7	
9.5	4.1	28.3	
9.0	9.0	15.8	K
9.0	12.9	9.1	
9.0	19.4	56.0	
9.3	20.3	46.2	
9.5	30.0	21.2	
9.5	33.1	22.5	
9.2	36.0	15.8	K
9.0	42.0	22.1	Sj
9.0	48.9	3.0	K
9.0	53.1	23.8	K
9.5	7 7.3	43.9	
8.5	12.1	26.0	K
9.3	47.9	13.0	
9.0	51.4	53.2	K
9.0	57.2	25.4	K
9.4	8 38.8	12.1	
9.3	57.3	24.3	
8.3	57.4	45.1	Sj
8.7	9 26.1	13.5	
8.7	40.2	18.6	
8.5	46.4	47.7	K
9.5	47.7	37.1	
9.3	49.2	38.9	
8.8	10 18.3	37.9	
9.6	35.2	11.3	
9.9	11 1.6	10.0	
9.5	5.5	53.3	
10	6.4	51.1	
7.0	19.4	48.5	L
8.6	59.1	7.5	Sj
8.5	12 17.3	35.9	K

1221—1280

	5h	—5°	
m	m s	′	
7.3	12 33.2	1.9	K
9.5	44.4	44.5	
8.0	55.2	21.3	K
9.0	13 17.4	41.9	K
7.0	19.3	30.7	K
9.0	23.5	57.9	
9.0	25.3	26.2	K
8.5	31.5	58.7	
9.0	35.5	55.6	
9.3	46.1	2.5	
7.5	14 12.5	57.9	R
9.7	24.0	20.1	
9.1	25.7	2.8	K
9.2	30.2	13.3	K
9.3	36.1	1.7	K
9.3	45.1	7.5	
9.4	15 40.1	5.5	
9.0	56.3	27.9	Sj
9.6	16 1.2	4.5	
9.0	7.2	17.6	
9.5	17 16.3	32.7	
9.5	17.4	50.1	
9.3	18.3	24.6	
9.0	38.4	40.7	
8.5	18 28.2	17.4	K
8.5	43.4	45.6	K
6.0	55.3	38.5	K
9.0	59.3	36.7	K
9.5	19 1.0	17.9	
9.5	5.2	5.3	
8.5	22.4	46.5	K
9.0	34.2	18.0	
9.2	53.3	35.2	
9.4	54.7	2.1	
9.3	20 0.7	4.4	
9.1	1.6	6.5	
9.5	15.0	31.7	
9.5	22.2	12.5	
8.5	30.2	22.3	Sj
9.3	42.4	39.7	
9.5	21 2.5	56.6	
10	12.1	7.9	
9.4	15.2	10.1	
9.5	24.1	11.5	
8.3	30.3	28.8	L
9.3	39.3	28.8	
9.3	42.2	21.4	
8.0	59.1	33.9	K
8.0	22 3.3	54.5	K
9.5	28.0	13.4	
9.5	32.0	20.1	
9.3	45.0	55.4	
9.1	47.1	2.8	K
8.5	23 3.0	19.2	K
9.5	17.0	18.3	
9.5	19.0	8.5	
8.5	36.0	36.7	K
9.5	48.6	4.3	
9.5	24 1.0	14.3	
	10.0	2.2	

1281—1340

	5h	—5°	
m	m s	′	
9.0	24 13.0	48.7	K
9.0	25.0	10.3	
9.4	59.0	31.2	
9.5	25 11.0	54.9	
8.7	38.1	4.2	K
9.5	41.0	22.3	
9.3	45.0	16.0	
9.5	58.0	41.5	
8.5	26 0.0	26.8	WC
9.5	24.0	52.3	
9.5	32.0	7.2	
9.3	39.0	16.6	
9.8	42.5	38.5	
10	43.5	52.1	
9.1	48.1	42.8	WC
9.4	48.2	44.9	
9.5	27 2.2	29.3	
9.5	7.2	18.1	
9.5	7.8	43.3	
10	26.5	52.2	
9.1	26.9	49.0	
9.5	27.2	9.6	
9.3	28.5	47.8	
9.5	33.2	13.6	
8.3	40.1	40.4	WC
9.8	41.8	25.2	
10	45.5	39.3	
9.1	48.2	36.2	
10	50.8	11.3	
9.5	53.6	12.0	
8.3	58.1	18.4	
9.0	28 1.7	58.3	
9.0	2.1	33.7	
9.0	8.0	55.2	
4.0	9.1	29.2	Sj
9.0	10.6	10.2	
10	11.7	15.2	
10	11.7	27.2	
5.0	16.0	30.5	S
7.8	19.3	30.9	
9.5	19.7	57.1	
9.3	20.7	54.0	
9.0	21.2	0.0	
9.5	23.6	38.8	
9.0	24.0	22.4	
9.0	24.2	31.4	
9.0	26.0	11.7	
9.5	28.0	18.4	
9.8	43.0	34.5	
8.2	47.4	42.9	L
9.0	50.9	28.4	
9.5	52.0	2.4	
8.8	29 2.3	9.1	
7.8	8.4	44.5	L
9.0	19.7	30.4	
9.0	22.7	51.8	
9.5	30.7	26.4	
9.0	31.7	13.5	
9.1	50.8	58.4	K
9.7	30 0.7	16.9	

1341—1400

	5h	—5°	
m	m s	′	
9.5	30 9.7	7.6	
7.8	27.9	1.9	K
10	29.0	58.5	
9.0	32.7	10.6	
9.5	50.7	24.5	
9.0	31 7.7	30.8	
8.0	17.7	7.6	Sj
9.0	22.7	12.5	
9.0	29.7	15.6	
9.8	47.5	16.1	
7.8	54.6	16.6	K
9.5	58.2	1.2	
8.3	59.2	58.7	
9.5	32 29.5	24.2	
9.0	35.4	8.6	K
9.2	33 7.6	40.6	
10	20.5	59.4	
9.4	45.7	6.2	
8.5	46.6	38.4	K
9.5	53.4	16.5	
9.1	58.3	2.7	
9.7	34 4.6	45.9	
9.0	41.5	22.7	K
9.5	53.7	57.5	
9.5	35 0.5	23.2	
9.5	3.5	28.1	
9.5	11.7	55.8	
9.5	23.6	42.4	
9.0	59.6	52.7	
8.8	36 3.8	4.0	Sj
9.3	28.7	1.4	K
9.5	31.5	25.5	
9.0	36.4	13.6	
9.5	53.8	3.8	
9.4	56.1	48.9	
9.5	57.0	43.1	
9.5	37 11.4	19.1	
9.4	16.4	10.5	
7.8	18.5	32.1	K
9.7	38.5	10.4	
9.5	47.7	0.1	
9.5	38 7.4	10.6	
9.6	19.3	1.5	
9.5	25.2	2.2	
9.5	26.5	23.1	
9.5	44.1	19.8	
8.7	52.4	19.5	K
9.5	39 8.8	10.7	
9.0	12.7	55.6	
9.3	15.6	50.2	
10	15.8	9.6	
9.4	16.6	48.1	
9.0	20.4	22.6	K
10	46.0	30.7	
8.5	51.4	11.5	Sj
9.5	40 0.0	35.6	
9.5	0.5	24.4	
8.0	13.6	38.6	K
9.0	16.5	32.3	K
9.4	26.4	21.1	

1123: $37^{s}.82$ $55'57''.6$ B_8, Ep. 1872.14 1315: θ^1 Orionis mit dem grossen Nebel
1329: J. Schmidt (A.N.93. 2213) var $9^1/_2$—<12

1401—1460				1461—1520				1521—1580				1581—1640				1641—1700			
	5h		—5°		5h—6h		—5°		6h		—5°		6h		—5°		6h		—5°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.9	40	46.7	5.2	10	52	8.7	53.5	8.0	2	25.5	2.6	K	8.3	11	42.9	0.4	K	9.4	20	27.6	32.9	
9.3		56.6	44.0	9.5		22.7	56.2	8.8		25.6	41.1	K	8.9		44.1	12.2	K	9.0		36.9	51.5	Sj
9.5	41	6.3	33.3	9.0		43.3	9.8	K	6.3		30.6	40.7	K	9.4		46.5	44.0	9.5		38.3	20.5	
9.3		18.7	23.8	8.5		47.4	11.1	Sj	9.8		42.8	19.8		9.1	12	11.0	9.1	K	8.5		43.2	4.2	Sj
8.8		23.2	23.8	K	9.0		59.5	29.8		9.8	3	12.3	26.6		9.3		16.7	13.5		9.7		52.7	53.9	
8.5		30.7	53.4	K	9.9		59.9	7.0		9.8		29.0	56.2		9.1		28.4	40.7		9.9	21	15.0	33.9	
9.5		31.6	38.7		9.3	53	11.6	39.2		9.5		39.7	59.8		10		33.3	50.4		9.4		22.4	40.0	
9.5		34.3	5.0		8.3		15.4	13.7	K	9.5		46.5	35.2		9.0		35.4	14.0		9.7		55.5	50.4	
9.0		45.6	48.9	K	10		18.4	57.9		9.5		47.7	52.2		9.5		40.6	13.3		8.7		57.6	29.1	Sj
8.7		48.2	32.3	K	9.5		44.4	49.0		9.7		47.9	13.7		9.0		47.0	5.5		9.0	22	1.5	26.6	K
10	42	2.5	23.9		9.5		47.5	55.7		9.1		51.7	25.8		9.0		58.8	32.1		9.0		7.3	39.0	
10		13.4	16.8		9.5	54	1.6	40.0		9.8		57.6	3.4		9.5	13	0.0	56.7		9.8		35.2	36.4	
9.5		30.6	46.7		9.5		3.5	31.5		8.7	4	4.4	42.4		9.3		6.1	31.9		9.6		37.0	58.1	
9.5		41.6	39.6		9.5		34.4	20.8		8.4		11.2	1.8	K	8.5		16.8	52.7	L	9.4		44.2	47.1	
9.5		51.4	14.1		9.7		36.8	31.6		9.1		12.4	9.8		9.3		18.9	9.3		9.0		47.4	29.2	K
9.1		53.5	24.2		9.0		44.9	7.6		9.8		16.6	15.4		9.8		23.6	11.7		9.5		57.8	50.9	
8.0		57.7	56.9	Sj	9.2		55.5	6.5		10		35.7	57.5		9.0		28.4	56.4		9.3	23	6.4	51.1	
9.5	43	12.6	49.3		6.5	55	0.8	8.6	Sj	9.8	5	16.1	38.1		9.3		53.7	40.6		9.5		7.9	29.2	
8.8		20.2	1.3	K	9.2		8.4	37.5		9.2		24.6	47.7		9.0	14	1.9	53.1		9.3		8.1	9.5	
9.5		35.5	24.4		8.5		41.3	3.7	Sj	9.8		29.6	2.8		9.8		3.0	26.0		9.8		25.4	56.2	
9.3		39.7	59.1		9.4		46.5	41.8		9.5		44.3	42.5		9.1		10.1	59.0	K	9.0		27.0	8.5	
9.0	44	3.6	39.4		9.5		53.3	36.8		9.8		48.1	47.1		8.5		35.9	14.4		9.0		49.4	46.8	Sj
9.5		32.7	58.6		10		53.6	27.9		9.3	6	9.2	14.1		9.3		37.4	56.5		9.4		52.1	2.8	
9.5		48.7	58.2		9.5	56	9.4	7.5		9.8		17.3	10.7		8.6		39.8	38.4	K	10		54.5	47.0	
9.5		50.5	23.5		10		43.7	17.2		9.9		24.9	1.7		9.6		51.1	43.6		9.4		57.5	7.4	
9.2	45	4.0	32.5		9.7		53.0	26.1		9.9		33.0	5.0		8.2		55.9	23.0	Sj	8.0	24	28.5	16.3	Sj
9.5		10.7	57.7		8.5		54.7	57.8		9.9		34.3	5.2		8.5	15	3.2	6.4		9.4		36.8	50.9	
9.4		40.2	4.2		9.5	57	26.4	10.8		9.8		43.4	26.3		8.7		5.1	12.6	B	9.7		37.4	43.7	
9.5	46	1.6	45.7		10		32.9	45.7		9.7		59.4	28.2		8.3		23.1	1.4	K	8.8		41.5	14.9	K
9.5		2.0	7.6		10		41.7	57.4		9.1	7	23.6	30.8		9.0		25.3	53.0		10		48.8	31.3	
9.8		12.7	15.2		7.8		48.8	20.1	Sj	9.5		28.1	48.1		9.8		32.2	24.0		9.8		51.1	30.7	
9.8		16.2	10.6		9.7	58	8.2	34.6		9.5		32.8	33.6		8.5		40.0	21.1	K	10		51.7	13.7	
8.3		29.4	18.8	Sj	9.9		13.7	22.9		8.9		51.9	16.2		9.1		42.6	33.1		10	25	0.0	39.0	
7.0		35.6	44.3	K	10		15.5	1.8		9.4		57.4	11.3		9.0		45.7	38.0		9.0		0.6	42.0	
9.2		36.5	31.4		8.5		24.7	23.6		9.0	8	4.9	46.1		9.3		49.8	59.2		9.4		6.8	38.4	
8.5	47	12.5	35.1	K	10		30.9	24.2		9.5		5.4	41.4		9.0	16	1.9	23.3	K	10		13.7	17.4	
9.7		38.7	58.1		8.3		45.8	3.1	K	9.5		7.8	44.2		9.8		24.6	11.8		9.3		15.0	40.1	
9.9	48	8.3	7.3		9.5		52.7	59.9		9.3		17.2	14.6		9.9		33.7	47.4		5.7		16.9	46.2	K
9.3		17.0	41.9		7.0		56.7	52.3	K	9.5		24.0	41.5		9.6		53.2	50.4		9.8		18.5	12.8	
9.5		39.4	21.0		9.0		57.6	38.5		9.0		26.7	54.0		9.8	17	5.5	0.9		7.9		32.0	14.2	K
9.1	49	14.7	55.3	Sj	9.5	59	16.5	26.5		9.3		28.6	47.2		9.5		14.9	56.0		9.4		40.2	45.8	
9.5		16.4	38.5		9.5		41.6	49.2		9.2		30.9	46.9		9.0		16.8	21.1		9.5		49.8	32.0	
9.7		26.1	26.9		8.8	0	9.5	33.6	K	9.4	9	45.1	46.7		9.5		22.2	36.6		9.5	26	11.6	31.2	
9.7		36.8	22.2		9.8		9.6	56.4		9.5		46.2	50.1		9.1		22.7	26.3		9.3		12.0	46.0	Sj
9.7		48.8	23.3		9.7		13.4	37.4		8.0	10	8.3	18.2	K	9.4		35.0	55.1		9.4		25.7	10.2	K
9.5	50	18.6	45.0		8.8		20.5	22.4	K	9.4		13.7	36.3		9.8		38.8	39.7		9.5	27	1.1	31.5	
9.3		23.7	57.5		9.4		32.1	24.0		8.7		23.3	15.7	K	8.0		40.4	25.2	Sj	9.0		1.7	55.1	K
9.7		24.2	7.0		10		36.7	16.3		9.5		26.8	52.1		8.8		55.5	33.9		9.8		5.6	53.7	
10		51.0	25.2		10		46.7	7.5		9.5		28.4	33.8		8.3	18	1.8	46.5	Sj	8.3		10.2	13.0	
9.5		52.2	56.7		9.7		47.5	33.2		9.4		29.3	13.0		9.8		15.8	40.6		10		33.7	18.8	
8.7		53.6	48.7	K	9.8		52.7	35.2		9.3		39.3	26.4		9.4		35.7	46.1		9.8		36.1	46.9	
9.6		59.0	36.7		9.5		58.4	21.6		9.9		53.0	19.2		9.1		38.1	29.8		10		42.5	49.2	
10	51	0.0	25.2		9.2	1	2.7	52.4		9.6		53.5	9.5		9.5	19	15.5	42.2		10		57.1	50.7	
9.5		1.4	18.4		9.5		10.6	43.4		9.7		56.1	40.6		9.8		17.0	27.8		9.3	28	4.9	26.4	
9.6		8.3	41.0		8.5		18.4	19.2	K	10		59.0	33.9		10		17.6	52.7		8.9		6.9	28.4	
9.0		17.3	3.9	K	9.0		21.5	22.7	K	7.1	11	10.6	35.9	L	10		39.8	47.0		9.8		13.1	10.8	
9.4		18.0	27.3		8.0		35.4	18.2	K	9.6		16.4	0.5		10		44.0	26.5		9.4		23.3	52.8	
8.8		42.5	33.5		9.3		54.3	2.7		9.1		21.4	7.8		9.8		45.2	13.3		9.0		37.9	42.6	K
9.5		49.5	34.8		9.5		58.5	24.9		10		30.7	53.4		9.9		53.1	59.1		9.2		38.3	16.6	
9.5		54.5	29.8		8.5	2	11.4	19.1	K	9.8		39.6	31.9		9.7	20	19.3	21.2		8.3		40.3	45.5	Sj

1417: 57′.88 56′40″.8 B_2, Ep. 1872.15 1478: stark röthlich 1685: 25′.51 9′57″.3 B_1, Ep. 1884.10

1701—1760					1761—1820					1821—1880					1881—1940					1941—2000				
	6h		—5°			6h		—5°			6h		—5°			6h		—5°			6h—7h		—5°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.8	28	52.4	53.0		9.8	36	9.4	25.8		8.9	43	5.6	59.4	L	8.5	49	44.8	17.4	K	9.5	56	37.4	59.3	
9.4	29	1.6	58.6		9.2		13.8	14.6		10		14.6	58.1		8.5		45.4	9.8	K	9.0		54.5	36.9	
8.4		6.1	41.9	K	9.0		17.3	34.0	Sj	9.7		23.0	45.4		9.8		48.2	12.0		5.8		57.6	6.8	L
9.5		6.7	11.5		9.6		28.5	56.8		9.4		26.1	24.7		9.3		49.9	52.9		9.8	57	10.9	54.9	
9.5		11.0	58.3		9.2		33.0	0.1		9.4		34.1	39.5		9.1	50	9.0	54.0		8.7		11.1	5.3	
9.5		12.4	22.4		10		46.9	45.5		9.8		42.8	38.9		9.0		10.4	51.8		9.3		16.2	50.1	K
9.0		17.0	54.7		9.3		48.2	54.0		9.1		47.7	9.8		9.1		15.1	58.3		9.8		20.4	14.2	
9.6		18.7	46.2		9.8		56.2	13.4		9.5		54.2	11.3		8.7		15.3	13.9	K	9.8		23.6	30.0	
9.5		20.6	47.7		9.3	37	9.3	15.1		9.1		57.4	51.9		9.1		19.6	58.5		10		28.5	21.5	
5.8		26.9	5.7	K	9.2		14.8	33.3		9.5	44	8.4	8.2		9.8		28.9	17.4		9.3		30.0	21.3	
10	30	20.5	43.0		9.0		15.8	58.0	K	10		12.9	53.6		9.1		29.6	27.3		9.2		30.7	43.1	
10		20.9	48.5		9.2		16.2	44.2		9.7		17.0	57.2		9.0		32.3	15.8	K	9.5		44.3	15.0	
10		25.6	32.4		9.8		22.7	36.6		9.0		20.8	58.5	Sj	9.2	51	15.2	37.1		10		45.7	44.8	
9.5		32.8	5.1		9.1		25.7	46.2		9.5		27.0	4.5		9.4		16.1	36.7		9.0		47.2	33.5	K
9.2		35.5	40.9		9.4		44.9	19.4		9.1		38.9	21.9		9.5		19.3	34.6		9.0		50.5	48.0	K
8.8		48.5	25.0		10		47.1	41.8		8.5		39.9	18.8		9.5		21.2	46.0		8.9		51.3	34.4	K
9.0		50.4	54.5		8.0		53.9	47.7	K	9.1		43.1	27.3		10		24.3	34.3		9.0	58	2.1	25.9	
9.4		55.4	23.7		9.6	38	2.8	36.1		9.8	45	3.6	48.7		9.5		52.6	59.1		9.8		13.2	38.8	
9.0	31	5.5	45.8		10		18.9	50.8		7.2		4.8	28.5	L	9.0		59.7	12.5		9.6		21.5	35.2	
9.2		8.8	18.2		9.3		19.7	10.5		9.6		5.3	26.0		8.2	52	12.3	13.0	K	10		27.1	43.4	
10		15.2	44.4		9.8		29.0	26.5		9.8		8.5	2.5		9.0		21.5	23.2		9.7		40.4	51.6	
9.8		21.1	0.5		9.8		30.8	36.0		9.2		11.0	23.7		9.2		25.6	52.1		9.7		53.9	46.0	
9.5		25.0	54.2		10		32.0	7.3		9.4		12.5	21.3		9.2		27.6	39.2		9.7		54.8	59.0	
8.5		35.6	10.5	Sj	9.8		32.7	13.3		6.9		14.5	0.2	L	9.8		30.7	10.5		9.4	59	17.6	48.4	
9.4		37.7	57.7		9.5		37.8	49.5		6.3		15.7	8.7	L	9.4		47.9	49.4		9.0		22.0	58.9	K
9.8		53.1	40.2		9.0		49.9	39.2	Sj	9.1		17.4	50.6	K	9.4		54.7	17.9		8.4		30.6	46.2	K
9.9	32	1.8	44.3		9.8		51.7	22.7		9.1		22.5	42.2		8.7	53	1.6	59.5		8.0		51.0	14.9	L
9.0		33.8	15.4	K	9.5		58.1	18.9	K	9.0		23.0	55.1	M	9.3		1.7	11.0	K	9.6		52.0	2.7	
9.1		37.1	49.3		9.8		58.5	58.4		9.6		24.9	43.1		9.5		2.6	0.6		9.5		55.5	58.3	
9.3		39.7	42.8		9.0	39	3.8	0.8	K	9.0		28.7	33.9		6.5		11.1	10.0	K	9.0	0	4.4	29.7	
9.1		40.7	16.1	K	8.2		5.6	5.3	K	9.0		34.8	15.4		9.0		12.2	51.4		9.5		5.2	0.3	
9.5		44.0	44.2		9.0		6.6	19.5	K	9.8		56.0	24.1		7.3		13.3	37.3	L	9.6		9.5	41.9	
9.3		51.2	41.0		9.5		12.8	7.5		9.7	46	3.1	52.3		9.0		24.3	17.3		9.5		10.4	4.5	—
9.7		51.2	17.7		9.8		18.8	37.0		8.8		5.8	26.5		9.8		31.4	19.2		9.8		20.3	20.3	
8.0	33	0.6	9.6	Sj	10		25.3	49.5		9.3		7.1	47.6		9.5		37.1	6.2		8.7		22.7	52.9	K
9.2		3.8	4.2		9.2		35.5	23.4	K	8.3		7.5	47.2	K	9.4		42.2	5.3		9.9		36.3	15.6	
9.7		7.4	43.2		8.0		41.6	59.7		9.1		10.1	29.8		9.1	54	6.4	5.5		9.7		51.5	47.7	
9.7		18.6	33.5		10		48.6	27.0		9.5		32.4	24.2		10		14.3	33.0		9.4		53.3	53.5	
9.3		28.0	53.9		9.1	40	0.3	7.5		9.5		38.5	24.4		9.3		16.1	39.7		9.8	1	3.6	30.0	
9.5		31.5	25.6		9.0		5.5	27.6	K	9.1		38.5	0.3	K	9.5		16.6	10.7		9.5		5.7	39.1	
9.8		37.2	25.0		9.7		8.2	40.1		9.8		49.3	13.1		8.3		19.1	57.2	B	9.1		6.0	25.4	
10		37.4	38.0		9.3		8.9	38.8		9.5		59.6	24.7		9.8		23.7	37.5		9.5		24.6	12.2	
9.1		39.4	41.5		8.8		9.8	50.3		6.4	47	2.1	40.3	K	9.0		24.4	3.4		9.8		31.2	16.3	
8.8		46.9	24.0	K	10		11.7	10.6		8.0		7.9	50.5	K	9.8		35.2	45.5		9.0		31.3	18.0	K
10		55.0	55.9		9.1		25.3	41.3		9.5		8.4	16.8		9.1		38.1	12.2		9.5		39.8	51.2	
9.8		59.6	31.5		9.5	41	2.9	4.1		9.5		10.2	21.2		5.0		49.5	31.2	L	9.8		41.4	35.4	
7.7	34	2.2	34.3	K	9.7		4.9	0.7		9.1		10.9	47.9	K	7.3	55	2.3	49.0	L	9.0		55.3	23.3	Sj
9.0		9.0	45.1	K	9.7		28.2	35.4		8.7		46.1	39.6	K	9.8		8.4	29.6		9.8	2	2.4	58.3	
9.6		10.4	43.2		9.1		36.7	49.0	Sj	9.1		56.0	22.7		9.8		12.0	36.0		10		10.2	16.5	
10		41.2	13.2		9.5		41.2	59.7		9.5	48	14.0	27.3		9.5		13.0	0.8		9.6		11.0	47.9	
9.0		58.7	17.2		9.8	42	12.7	12.8		9.2		19.3	44.7		9.4		40.0	1.1		9.8		13.0	12.7	
9.4		59.1	1.7		9.9		33.4	42.5		9.2		33.8	2.3	K	9.3		49.2	25.3		9.5		18.9	43.1	
7.0	35	2.0	58.5	K	10		35.5	56.9		9.0		54.5	35.7		9.8		54.6	37.6		7.9		26.0	48.8	L
9.4		5.2	13.9		9.1		38.0	54.4		9.6		58.3	34.1		10	56	9.5	57.1		9.0		27.7	26.9	K
9.2		22.0	55.8	K	7.5		48.9	20.9	L	10		59.5	57.2		9.8		11.1	31.7		9.2		28.1	37.8	
9.8		25.4	5.0		9.4		56.3	36.3		9.7	49	8.8	56.9		9.4		14.3	4.3		9.5		34.1	40.0	
10		29.9	52.5		9.7		57.0	47.3		9.5		27.4	19.1		9.5		16.7	26.8		8.2		45.1	30.7	K
9.8		44.9	53.9		9.5		58.1	14.0		9.0		36.1	26.5	K	9.5		17.0	15.0		9.1	3	7.5	34.9	
9.0		45.6	42.7		10		59.1	43.5		9.6		41.9	44.9		9.6		18.8	50.1		10		9.8	53.9	
9.9	36	5.7	4.0		8.5	43	0.2	38.8		9.6		42.6	46.5		9.5		19.0	27.5		9.4		14.9	11.7	

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	7h	−5°			7h	−5°			7h	−5°			7h	−5°			7h	−5°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	3 18.9	12.0		9.0	11 7.8	28.9	K	9.2	20 2.2	17.3	K	9.1	29 23.3	21.7	K	9.5	39 14.7	55.2	
9.8	35.0	57.4	—	9.4	27.6	16.6		9.4	3.8	46.6		9.5	41.7	52.1		8.3	21.5	5.7	
9.7	43.5	25.3		9.5	36.9	54.5		9.5	4.1	51.0		9.0	53.2	35.5	K	8.0	27.7	59.1	Sj
9.0	45.6	34.4	K	9.8	48.2	53.3		9.8	35.4	50.2		9.2	30 2.2	29.7		9.1	41.5	1.2	
9.3	50.6	5.2		8.5	50.2	10.2	K	9.4	49.7	8.7		9.8	17.2	11.9		9.2	44.5	1.0	
8.9	59.9	13.7	K	9.5	12 7.3	7.5		9.8	56.6	59.6		9.9	26.1	56.0		9.4	40 7.3	21.8	K
9.7	4 22.0	7.3		9.5	20.3	28.9		8.7	21 8.3	40.4	K	8.7	37.0	52.8		9.5	13.2	14.5	
9.0	23.2	21.1	Sj	9.1	31.2	38.5	Sj	9.8	23.7	53.6		9.3	44.5	42.5		9.8	27.1	54.5	
9.5	32.5	34.5		9.2	34.6	1.0	K	9.6	26.2	1.1		9.1	53.3	23.3		9.4	29.3	14.0	K
9.7	38.0	1.5		9.0	46.1	45.9		9.3	27.9	50.1	K	9.0	58.3	20.8		9.3	30.5	2.0	
8.5	43.0	26.2	K	9.3	13 5.4	41.9		9.4	37.2	23.7		9.3	59.5	23.3		8.8	33.9	41.3	
9.3	55.9	40.9		8.8	6.5	57.0	K	9.2	41.2	23.9	Sj	9.0	31 3.0	14.5		9.8	41.5	41.7	
9.1	58.4	12.6		7.8	6.9	52.1	K	9.2	55.2	3.3	Sj	9.3	4.7	19.0		9.0	47.7	6.4	Sj
8.2	5 2.1	12.0	K	8.8	25.6	45.9		9.5	22 3.4	53.6		8.6	20.2	28.0		9.8	54.6	56.8	
9.4	11.5	55.5		7.5	42.9	52.1	K	9.4	11.6	44.4		9.4	36.5	42.2		8.5	57.2	32.7	Sj
9.3	12.2	11.8	K	9.1	45.3	5.0		9.3	12.0	45.4		7.8	40.3	8.3	B	9.5	41 0.8	19.3	
9.5	16.5	6.2		8.8	56.2	15.5		8.7	26.7	18.4		10	48.6	53.9		8.9	16.7	17.8	K
9.2	22.9	20.9		9.3	58.5	45.0		9.5	40.2	29.3		8.8	58.8	20.7	Sj	8.4	32.0	42.8	K
9.8	52.7	11.5		9.5	14 19.3	20.0		9.5	45.4	58.9		9.4	32 6.2	29.9		9.5	45.1	50.5	
9.8	6 1.1	29.2		7.0	27.7	37.7	Sj	9.7	23 18.7	17.6		9.4	22.2	32.5		9.4	55.6	41.0	
10	2.7	45.2		9.8	31.7	6.2		9.8	32.3	21.4		9.4	35.7	5.7	K	9.5	42 33.4	56.1	
9.4	8.2	13.0		9.1	36.4	10.0		9.3	59.8	1.4		7.8	42.6	55.0	L	10	36.9	0.8	
9.0	9.7	45.6		9.1	43.8	50.9	K	9.0	24 0.3	42.7		9.4	33 4.6	49.4		9.2	39.1	53.6	
9.8	15.8	2.8		9.3	44.3	36.6		9.1	0.7	50.9	K	9.5	5.3	15.1		9.5	53.7	22.0	
9.8	17.0	5.5		9.0	54.2	33.3	Sj	8.4	5.7	2.8	Sj	8.7	7.9	44.8		9.2	43 14.3	41.1	
9.3	30.7	13.2	Sj	8.2	54.9	18.1	L	9.5	13.7	41.8		9.5	18.7	12.2		9.3	26.8	7.0	
9.6	38.2	14.0		9.0	15 2.3	51.4	K	9.7	18.2	49.0		9.7	22.2	1.6		7.0	28.5	26.8	Sj
9.5	48.9	52.5		9.4	3.0	28.3		8.7	39.2	16.5		9.4	29.7	23.4	K	9.1	31.2	5.3	
9.0	49.4	43.4		5.9	19.1	42.2	K	9.0	40.8	28.0		8.7	39.2	24.9	K	9.3	34.4	41.4	
9.5	53.9	49.3		9.5	25.6	23.6		9.4	44.5	55.1		9.5	34 2.2	26.5		8.9	38.5	1.3	Sj
9.8	7 7.1	39.5		9.1	48.4	40.2		9.5	45.8	27.1		9.5	3.2	4.7		9.6	45.8	36.1	
9.5	19.0	58.0	M	8.8	16 12.3	21.6		9.8	49.7	24.2		9.4	5.8	8.8		9.6	49.7	35.8	
9.5	28.2	4.3		9.2	15.7	12.2		7.3	51.2	38.0	K	9.1	29.5	47.0		9.2	57.1	38.9	
9.3	39.7	1.2		9.6	32.4	50.5		9.3	25 1.6	52.0		9.8	38.3	29.5		9.5	44 23.2	37.1	
9.5	50.5	4.8		8.7	32.7	11.4	K	9.3	1.9	55.6		10	43.1	24.0		9.5	52.5	42.0	
9.8	53.3	15.7		9.2	17 3.8	45.0	Sj	9.6	7.3	11.1		8.2	52.7	27.5	Sj	9.1	55.7	10.1	
8.3	8 7.8	46.2		9.5	15.8	21.6		9.4	10.7	1.8		9.5	35 0.5	44.0		8.5	45 26.1	32.8	K
9.5	19.2	18.9		9.4	22.6	31.1		9.3	26.8	19.8	Sj	8.7	26.6	24.7		9.0	26.7	38.4	K
9.5	25.7	12.6		10	29.7	3.1		9.2	33.7	38.7		9.5	45.2	25.4		9.6	31.3	41.7	
9.5	35.6	30.3		9.9	34.6	57.5		9.5	35.2	44.8		9.2	49.2	28.7		5.7	38.7	3.2	Sj
9.5	43.5	4.6		9.5	43.3	0.6		9.3	41.5	41.0		9.2	36 17.2	9.6		9.3	46 8.7	35.3	
9.5	45.0	26.1		9.1	54.0	14.5	K	9.6	47.7	35.2		9.0	25.3	20.1		9.8	10.9	53.7	
9.1	53.6	58.6		9.0	18 1.2	14.6	K	9.7	58.9	58.1		8.8	32.7	58.2		9.7	13.3	44.4	
9.0	9 2.2	32.7		8.6	1.8	27.6	Sj	9.6	26 15.4	2.0		9.1	44.7	11.1		7.8	41.1	41.5	Sj
10	22.1	45.6		9.8	4.3	27.1		7.3	26.5	55.0	K	8.5	46.8	19.7		9.4	43.8	56.8	
9.4	22.8	2.4		9.9	12.9	12.8		9.7	35.0	36.2		9.3	50.6	47.7		9.8	59.3	19.7	
9.5	29.5	51.1		10	13.0	17.0		9.5	27 0.6	35.1		9.3	50.6	51.1		9.4	47 0.2	30.6	
9.0	35.8	55.9		9.3	20.5	42.6		9.1	7.6	37.6		9.4	58.9	53.3		9.5	10.3	22.0	
9.8	50.6	6.7	-	9.3	21.4	1.1		9.4	11.2	34.0		9.0	37 1.2	30.6	Sj	9.4	29.7	31.6	
7.9	55.5	58.7		9.8	25.4	51.3		10	31.8	33.4		8.6	17.8	1.8	K	9.5	53.5	3.0	
8.7	10 2.4	39.3	Sj	9.4	33.6	28.6		9.7	33.1	42.8		8.8	44.5	12.5	K	9.6	48 15.6	31.1	
9.8	13.4	23.2		6.3	44.2	29.1	K	9.4	35.7	38.0		9.5	51.8	14.9		9.8	21.6	32.7	
9.5	17.5	26.5		9.8	19 6.5	5.0		8.5	44.2	7.0	Sj	9.5	38 5.4	21.8		9.0	24.2	39.3	
9.5	21.9	11.7		9.5	9.3	38.0		9.8	49.1	51.6		9.4	11.2	16.0		9.0	28.0	49.5	
7.3	24.5	33.8	Sj	9.6	12.7	16.6		9.1	28 19.7	39.9	Sj	9.8	25.1	42.8		9.7	44.9	31.3	
9.1	26.3	27.9		9.4	19.8	20.1		9.4	19.8	41.1		9.4	26.7	37.3		8.7	49.8	8.0	Sj
9.3	27.0	42.3		9.5	37.9	23.2		9.8	57.6	12.1		7.0	34.3	19.7	L	9.0	50.6	26.0	
10	37.1	55.8		7.8	39.2	34.7	K	8.2	59.3	27.9	K	9.5	52.2	2.7		9.4	54.5	48.9	
9.3	54.5	3.1		9.2	41.4	51.6		9.1	29 8.7	52.4		10	55.1	57.4		9.5	49 6.4	3.1	
9.8	54.8	52.6		9.0	49.3	14.3	K	9.6	12.8	44.2		9.5	39 4.5	4.5		9.2	12.8	21.6	

2301—2360					2361—2420					2421—2480					2481—2540					2541—2600				
	7h		—5°			7h—8h		—5°			8h		—5°			8h		—5°			8h		—5°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.0	49	13.7	15.1		9.5	59	5.1	57.1		9.5	6	13.1	19.3		9.1	10	29.4	12.3	K	8.8	21	28.8	14.7	
9.4		26.2	10.4		9.4		20.1	20.0		9.6		16.3	17.3		8.3		44.2	58.0	Sj	9.5		32.0	27.5	
8.4		33.0	42.6	Sj	8.8		29.3	13.0	K	9.4		17.2	23.9		9.4	11	6.1	27.2		10		49.8	13.6	
9.5		36.2	39.5		9.4		37.9	5.8		9.3		18.4	22.2		9.8		15.5	18.8		7.7		55.7	23.6	M
9.4		39.5	5.1		9.5		48.8	20.3		9.5		21.3	37.7		9.8		20.8	8.1		8.8	22	2.2	9.3	K
9.9		44.1	27.9		9.5		59.3	22.8		9.5		25.4	27.0		8.7		35.4	44.3		9.6		17.8	15.9	
9.5		48.3	20.5		9.3	0	1.2	55.9		9.4		27.7	35.5		9.5		48.3	38.6		8.7		20.1	32.1	M
9.6	50	9.7	5.5		8.8		23.3	24.8	K	9.3		28.7	57.3		9.8		52.6	22.8		9.8		26.2	9.6	
9.5		11.0	43.1		9.7		23.6	27.2		9.1		30.5	21.2		7.1	12	4.9	10.0	Sj	9.5		28.6	57.1	
9.8		14.6	8.2		9.5		28.8	21.5		9.1		31.0	20.8		9.5		14.6	58.0		8.4		31.8	50.3	
9.5		28.6	55.0		8.4		31.4	43.9	Sj	9.8	7	33.9	20.1		9.9		18.6	56.7		9.6		33.5	23.3	
9.0		46.8	33.3		9.2		36.2	40.4		9.0		35.2	22.6		9.8		28.4	10.0		9.6		39.4	0.0	
9.0		56.2	39.7		9.5		37.8	35.5		9.0		35.4	21.8		9.8		30.1	26.5		10	23	4.6	35.0	
9.5		57.5	54.7		9.8	1	10.0	46.3		10		36.9	20.1		9.6		40.8	36.8		9.7		5.0	48.5	
9.0	51	14.6	41.9	K	9.3		12.5	20.5		8.8		37.8	18.6		9.5		44.0	3.1		9.8		26.4	3.3	
9.5		21.2	12.8		9.8		27.4	0.1		8.6		38.5	11.1	K	9.5		52.4	12.4		9.6		31.5	31.8	
9.5		29.1	30.0		9.5		39.3	32.3		9.1		39.2	18.3		9.5	13	0.2	59.5		9.2		37.4	55.3	
9.0		35.0	18.2	Sj	9.0		52.4	7.7		9.3		42.5	16.1		10		15.1	56.6		9.6		56.5	28.6	
10		38.0	50.0		9.3	2	9.1	44.6		9.5		44.4	32.4		9.8		16.1	22.9		9.8	24	1.4	51.7	
9.8	52	8.9	42.4		9.7		16.5	28.3		9.5		46.4	21.6		9.6		48.3	39.8		9.5		5.9	42.6	
9.3		12.3	0.2		8.1		29.0	42.3	B	10		49.8	24.6		9.2		48.8	3.8		9.7		9.2	39.2	
9.8		35.5	53.3		9.5		31.3	25.1		9.5		53.3	15.5		8.8		50.3	46.5	M	9.3		11.8	30.4	K
9.7		49.8	23.9		9.8		33.2	54.8		9.5		53.7	30.6		9.5	14	1.0	18.3		9.1		23.1	35.9	K
9.7		58.3	25.5		9.3		35.9	3.9		9.1	7	1.6	8.1		8.9		17.9	3.3	Sj	9.1		32.7	49.9	K
9.5	53	8.7	27.0		10		42.0	59.3		9.2		4.1	42.8		9.1		24.3	33.9		9.3		53.8	22.2	K
9.3		16.2	37.1		8.8		46.1	11.0		9.0		5.0	17.0		9.0		30.7	57.5	K	7.7	25	24.9	24.7	K
8.4		21.2	4.4	K	9.1		48.9	52.4		8.4		7.3	28.1	K	9.8		48.4	12.0		8.9		51.3	49.8	K
9.1		37.2	37.3	K	9.2		55.6	4.2		9.8		10.0	13.9		9.4		56.5	21.1		9.3	26	11.8	51.5	
9.1		54.0	50.5		9.0	3	6.3	25.4		10		11.8	20.6		9.4	15	0.9	14.2		9.5		15.7	1.5	
9.8		54.5	18.8		9.1		8.6	5.5		9.6		14.1	5.0		9.8		17.5	21.0		9.2		24.1	31.7	
9.4		56.1	4.3		9.0		14.0	17.9	K	9.5		16.1	18.4		9.3		19.9	35.0		10		28.4	34.0	
9.5	54	32.6	57.5		8.9		36.8	24.5		9.4		18.0	15.5		6.3		21.6	42.9	K	8.7		45.0	32.1	
9.2		41.1	31.4		9.5		50.1	51.3		9.5		18.4	36.1		9.2		34.8	31.7		8.3		46.4	45.2	K
9.6		43.2	38.3		9.4	4	21.6	54.3		9.5		20.9	20.9		9.5		48.8	6.1		8.3		50.9	59.0	K
9.5		59.6	14.4		7.5		25.3	35.5	K	9.3		33.5	0.9		9.3		54.2	44.4		10	27	2.3	1.4	
9.3	55	0.6	30.8		8.9		33.8	0.0		9.5		38.2	22.5		10	16	3.1	58.5		9.5		6.2	46.5	
9.8		14.7	24.9		9.1		37.4	6.9		9.4		39.2	57.0		9.9		45.9	42.5		9.6		15.4	22.7	M
8.9		16.2	5.1		9.8		58.5	37.1		9.5		47.2	56.6		8.5		46.8	51.2		9.2		39.6	34.4	
6.5		17.9	56.0	K	8.0		59.5	39.8	K	9.1		49.4	6.0	K	7.8	17	1.4	12.8	K	9.8		41.3	53.4	
8.9		23.2	24.9		9.6	5	2.2	0.2		9.4		52.0	44.6		9.0		41.5	52.2	M	9.8		47.5	57.0	
7.5		38.6	55.4	Sj	9.6		3.5	7.6		9.0	8	58.8	52.8	M	9.4		44.2	4.0		9.8		50.6	47.7	
8.8		52.5	57.3	K	9.4		9.5	3.4		9.0		3.1	52.5	M	8.5	18	0.0	9.5	K	9.3	28	12.5	3.2	K
9.5		57.0	27.4		9.4		26.4	14.1		8.3		27.9	34.6	K	8.6		25.1	0.9	K	9.6		21.9	45.7	
8.7	56	10.7	37.5	K	9.3		27.8	15.1		9.8		36.7	29.1		9.1		44.8	12.1		9.3		28.4	45.7	
9.1		14.4	26.4		9.5		27.9	10.8		8.4		53.1	25.7	K	8.8		53.5	3.4	K	9.5		33.4	1.5	K
9.8		19.2	12.7		9.9		39.0	27.8		9.8		53.6	10.4		9.1	19	0.4	16.2	K	9.8		37.4	23.7	
8.8		35.5	16.4	K	9.6		40.8	24.9		9.2		54.3	45.7		8.6		8.5	23.7	K	10	29	14.3	12.2	
9.0		37.9	53.5	K	9.6		40.8	4.5		9.8		55.4	13.0		10		18.3	38.7		10		19.9	21.9	
9.5		46.8	49.2		9.6		44.2	50.9		9.5	9	0.3	52.3		7.8		45.4	43.8	K	9.3		24.9	6.9	
9.4		47.9	2.9		9.6		44.7	3.5		9.1		3.0	19.0	Sj	7.0	20	9.0	55.7	K	8.2	30	11.4	58.4	Sj
9.4		55.9	23.3		9.1		48.2	8.0	K	9.8		19.0	51.2		9.8		11.6	43.7		9.3		24.2	42.1	
8.8	57	33.4	41.6	K	9.4		54.7	27.0		9.4		22.2	32.0		9.6		14.1	6.4		9.1		33.8	2.7	
7.0		38.6	0.3	K	9.1		55.2	19.0		9.1		34.8	6.7	K	9.8		20.0	36.0		9.8		41.2	48.6	
9.4		47.1	51.8		9.0		58.5	12.5		8.5		53.6	58.1		9.8		21.9	44.0		9.5		59.6	37.7	
9.8	58	12.1	52.2		9.6		58.7	0.8		9.3	10	2.7	30.4		9.0		45.9	33.5		9.8	31	14.7	8.4	
8.7		20.8	8.3		9.8	6	2.6	20.3		9.1		3.4	8.1	K	9.4		46.7	6.9		9.8		17.8	42.3	
9.0		29.3	16.7	WC	9.8		4.8	30.5		8.8		10.9	12.7	K	9.0		48.8	11.2		9.3		22.3	17.4	
9.5		31.2	0.9		9.8		6.4	15.3		9.8		12.9	57.5		9.0		51.0	26.8		9.0		26.6	45.1	
9.4		33.8	17.0		8.6		7.8	12.5	Sj	9.3		14.3	33.4		9.5		57.6	28.9		8.9		28.4	55.3	M
10	59	4.4	20.3		8.5		9.4	7.5	K	9.4		19.8	54.4		9.6	21	0.3	46.0		9.1		34.3	19.6	

2601—2660				2661—2720				2721—2780				2781—2840				2841—2900			
8h		—5°		8h—9h		—5°		9h		—5°		9h		—5°		9h		—5°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.3	31 37.0	25.8		8.5	47 11.9	29.9	L	10	0 34.7	34.4		9.3	15 3.7	57.0		9.0	27 58.4	12.1	M
8.5	41.9	40.2	M	9.8	36.0	55.2		10	40.1	6.1		7.5	10.6	26.3	Sj	10	28 11.5	21.7	
9.5	32 50.1	58.0	M	10	53.0	50.2		10	43.8	32.9		9.5	36.5	11.7		9.0	13.0	49.8	M
9.5	58.1	48.4		10	48 20.7	3.9		10	49.9	21.3		9.0	43.3	58.6		9.9	29 3.0	49.1	
9.6	33 2.4	57.5		9.1	23.0	10.5	K	9.2	1 10.6	34.9		9.0	16 7.6	19.2		10	4.8	9.7	
9.0	3.9	24.2	M	9.0	25.4	32.1	M	9.1	13.5	32.7		9.8	52.5	57.8		9.4	18.3	12.8	K
9.7	13.7	43.9		9.4	30.8	22.1	M	8.5	16.1	2.6	K	10	17 6.5	37.1		9.5	29.1	54.1	
9.1	32.2	10.8	K	8.3	53.2	43.3	K	9.9	19.4	15.0		8.6	12.3	28.9	K	9.7	33.8	53.7	
8.3	34 38.5	5.8	K	9.5	49 22.5	43.5		9.8	25.5	53.4		8.9	28.6	22.1	K	9.3	41.1	53.7	
9.7	43.2	44.9		9.0	50 22.5	7.7	M	9.3	46.8	6.7		8.4	39.6	23.2	K	9.6	43.6	53.2	
10	35 0.4	58.5		8.3	37.7	3.6	K	9.0	50.7	9.4	K	9.5	45.2	32.6		9.3	30 15.0	52.2	
9.5	43.8	18.0		9.8	52.9	6.9		8.6	51.1	22.8	K	9.3	18 4.5	9.4	K	10	28.4	43.6	
9.5	55.7	16.2		9.5	53.6	14.8	M	9.8	2 5.8	12.0		9.2	9.7	51.8		10	32.1	37.3	
9.9	36 5.5	33.1		9.5	58.8	25.7		9.8	8.1	11.9		7.8	14.7	46.9	L	8.5	39.0	30.8	K
10	34.2	9.7		8.5	51 13.6	14.8	K	9.4	28.0	27.4		8.2	23.0	15.2	K	9.5	57.2	16.3	
8.3	37.4	30.6	M	8.9	34.4	28.2	K	9.8	46.1	41.7		10	19 30.6	3.4		9.8	31 31.2	9.6	
9.5	40.6	38.0		9.8	44.2	55.8		9.1	57.5	51.8		9.7	35.6	40.2		9.8	45.7	9.4	
8.9	45.3	19.0	M	10	51.4	48.7		7.5	3 8.6	34.1	Sj	10	46.0	15.0		8.5	57.9	4.3	Sj
8.0	48.1	58.8		8.7	55.8	27.8	K	9.0	10.9	17.6		9.7	57.4	46.9		9.8	32 7.5	29.4	
8.3	37 15.8	41.1	M	8.5	56.1	17.7	K	9.5	12.0	29.7		10	20 11.9	6.0		9.5	32.7	25.4	
9.6	48.0	0.5		9.8	52 18.4	42.8		9.7	25.1	32.8		9.6	33.5	17.8		8.8	39.2	10.2	K
9.5	38 18.9	25.7		9.5	20.9	0.6		9.4	32.0	54.5		6.0	34.6	26.5	B	9.6	57.7	1.5	
9.2	39 1.1	37.7	M	9.0	22.2	18.7	K	9.5	4 13.0	28.4		8.5	45.7	2.5	K	9.9	33 1.8	13.2	
9.0	8.0	28.6	M	8.5	35.0	33.1		9.5	29.8	4.5		9.2	21 22.2	39.6		9.9	17.2	43.0	
8.0	12.0	53.0	L	9.4	39.3	47.6		9.9	36.9	14.0		9.4	26.1	32.0		9.0	53.1	56.2	
9.6	20.3	42.1		10	56.9	44.5		9.5	47.4	20.3		9.4	28.7	49.0		10	34 3.0	42.5	
9.3	33.2	13.3		9.9	57.2	37.3		9.4	48.8	13.6		10	43.2	36.4		10	3.1	16.7	
9.4	47.0	1.1		10	53 23.5	10.8		10	5 15.6	3.8		9.8	53.0	16.7		9.4	9.6	57.6	
9.1	48.1	48.3	M	8.3	43.8	42.0		9.6	45.0	24.9		9.3	22 8.4	11.1		9.7	26.4	3.8	
8.8	40 9.9	28.0	M	10	49.4	30.4		9.5	54.9	36.5		10	15.0	43.1		8.8	44.3	14.2	M
9.8	10.8	29.1		9.5	54 7.5	9.0		9.0	6 18.1	13.7	K	9.8	21.5	41.0		10	50.7	54.0	
8.9	13.5	22.5	M	9.8	32.2	1.9		10	39.0	33.4		9.3	32.5	31.3		9.2	53.7	44.5	
8.8	18.7	12.8		9.2	55 0.8	21.9		10	41.2	40.4		9.1	41.4	11.2	M	9.1	35 4.1	34.1	
9.8	34.4	28.3		9.2	1.1	20.5	M	9.0	7 26.7	49.3		8.2	56.5	22.5	Sj	9.0	19.3	12.9	M
9.2	55.0	53.5	M	9.3	9.1	55.1		9.5	8 14.4	38.6		9.5	23 3.0	22.7		9.7	31.5	53.9	
9.4	41 8.5	8.8	M	9.6	28.5	12.3		9.0	17.9	6.5	K	9.0	28.2	11.8		7.9	36 0.1	58.1	K
9.5	12.4	59.6		9.5	56 0.1	50.9		9.8	23.2	1.9		9.6	28.7	37.1		8.9	3.2	22.4	M
8.7	13.6	0.4	K	8.3	10.3	21.8	Sj	9.8	55.0	42.1		9.7	30.1	5.0		10	8.0	4.8	
9.5	31.8	3.1		9.4	20.4	31.6		9.0	9 2.6	16.3		10	31.4	11.5		10	10.8	8.1	
9.3	42 18.3	18.1		9.8	57 10.1	48.7		9.3	9.0	35.5		7.0	40.8	1.7	K	9.0	29.0	32.8	K
9.5	30.4	27.2		9.6	16.9	24.7		9.1	9.9	24.6	M	10	57.0	25.4		8.4	55.0	30.9	K
7.2	31.0	9.4	K	9.1	19.1	50.7		5.8	29.1	45.2	K	9.0	24 7.2	34.1	K	9.7	37 15.0	51.3	
9.6	40.4	49.9		9.7	20.3	40.3		9.5	38.8	57.1		10	8.3	9.5		9.1	18.2	45.6	M
8.5	48.3	26.7	K	9.8	24.3	2.3		9.5	42.3	22.2		9.4	32.4	17.3		9.2	25.4	26.4	
10	43 29.9	28.6		9.9	47.4	24.0		9.7	10 7.9	42.7		9.2	55.6	11.1		8.8	26.3	37.4	K
9.0	41.0	49.3	K	9.2	55.4	49.9	M	9.1	39.6	35.7	M	9.1	25 1.5	8.3	M	9.6	26.5	31.4	
8.0	50.9	41.9	K	9.3	57.7	37.8	M	9.4	58.4	46.7		9.4	1.7	19.8		10	29.5	20.2	
8.5	44 4.7	14.1	M	9.8	58 17.9	18.5		9.6	11 11.6	17.0		9.4	8.6	7.0		9.1	38.7	4.3	K
9.8	6.2	35.3		9.5	47.6	37.2	M	9.8	16.1	14.1		10	9.2	44.7		10	59.6	41.7	
9.3	7.6	43.6	K	9.5	48.4	38.1		9.3	26.7	26.7		9.5	21.5	3.0		9.0	38 30.9	53.2	K
8.5	24.4	25.7		9.8	50.0	1.5		9.5	43.7	44.1		10	24.7	41.0		9.8	33.8	13.2	
9.5	54.8	23.1		9.4	50.7	23.4		9.0	54.7	53.8	K	9.8	26 1.3	49.2		9.8	52.7	51.2	
8.9	45 10.3	46.0	M	8.8	59 36.3	7.3	K	9.9	12 10.2	33.0		9.4	10.4	17.8		9.8	55.4	6.1	
9.8	46 11.0	33.2		9.8	39.6	4.4		8.0	35.1	22.9	Sj	8.7	10.4	51.8	K	10	57.8	15.0	
9.1	13.4	3.4	K	9.6	48.4	41.6		10	40.2	49.1		10	37.0	44.0		8.5	59.5	24.7	K
7.8	13.4	40.1	L	10	0 0.2	59.9		10	52.7	51.9		10	54.2	4.6		9.4	39 0.4	26.9	
8.7	30.8	22.5	L	9.8	10.3	42.7		9.1	13 7.6	22.9	M	9.8	54.5	50.7		9.9	1.9	27.8	
8.5	45.8	22.3	L	9.5	13.0	25.5		8.9	34.4	8.7	K	9.4	58.7	41.2		9.2	11.1	21.5	K
9.5	47 0.6	9.3		10	13.2	0.3		9.1	48.6	22.1		9.4	27 16.6	32.5		10	12.0	17.5	
9.0	3.1	20.5		10	16.6	35.5		9.6	14 43.1	24.3		6.7	18.4	16.4	K	9.8	33.4	43.3	

2901—2960					2961—2020					3021—3080					3081—3140					3141—3200				
	9h		—5°			9h—10h		—5°			10h		—5°			10h		—5°			10h		—5°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
10	39	51.0	35.5		9.8	52	20.7	59.8		8.5	7	38.0	31.2	K	9.8	25	27.5	19.5		9.8	39	17.0	52.2	
8.6		51.6	9.2	Sj	9.8		29.5	38.2		9.6		43.4	41.4		9.5		28.4	13.8		9.5		31.7	16.9	
9.8	40	12.8	53.7		9.1		33.6	48.1		10		47.0	17.0		9.9		29.2	14.8		9.9		51.5	59.8	
9.4		24.4	30.8		9.4		36.7	40.5		8.8		50.7	42.2	K	9.3		41.4	27.3		10		54.7	42.8	
10		36.8	15.4		9.9		42.8	31.1		9.0	8	11.1	16.7	K	10		51.1	58.6		9.5	40	23.6	11.5	
9.6		49.9	15.3		10	53	32.7	57.3		9.3		34.4	11.4	M	10		53.3	20.4		9.8		45.9	35.5	
9.8		51.1	12.5		9.3		33.4	52.6		9.2		45.3	35.2		9.4	26	10.2	51.9		10	41	35.1	43.3	
7.3		51.7	14.3	L	9.6		44.6	11.2		8.1	9	0.8	6.7	K	9.4		15.9	25.7		10		36.3	34.7	
9.5	41	24.5	29.3		9.1		53.0	6.7	M	10		16.6	12.0		9.0		27.0	37.9	K	9.5	42	11.0	50.2	
9.3		24.7	3.6		9.2	54	6.9	49.0		10		19.4	43.7		10		31.2	17.8		9.8		17.6	41.1	
9.3		32.1	10.0		9.1		24.7	24.8		9.0		33.8	7.6	K	9.8		43.1	51.3		8.3	43	8.9	54.2	K
10		52.5	37.5		8.8		36.2	0.6	M	9.6		42.0	42.8		9.8	27	2.9	31.3		9.2		33.4	6.3	
10	42	12.7	50.3		10		57.5	40.7		9.1	10	45.1	26.5	M	9.1		12.7	17.3	M	8.7		52.9	7.2	K
10		14.6	4.9		10	55	11.3	47.0		8.3		49.0	42.0	K	9.1		27.2	52.8	K	9.2	44	32.1	1.1	Sj
9.4		25.0	36.4		8.8		11.9	53.0	K	9.4		49.6	8.9		9.8		28.9	46.6		9.8		49.5	13.2	
9.3		25.6	5.4		8.7		27.6	48.4	K	9.9		57.9	6.4		9.2		32.2	47.7	K	9.7	45	10.7	31.6	
9.5		45.4	39.8		8.8		36.1	13.6	L	9.3	11	0.5	56.3		9.1	28	5.9	30.8	M	9.4		12.0	42.1	
10	43	10.8	16.5		10		56.3	30.1		9.9		9.4	9.8		9.8		15.6	47.5		9.8		19.3	47.7	
9.5		19.5	37.5		8.8		58.7	56.4	K	9.4		19.4	44.0		9.8		36.3	23.5		9.6	46	11.6	26.8	
9.1		47.0	49.2		10	56	9.5	51.2		9.0		38.3	38.3	M	9.7		42.1	45.4		9.4		36.2	29.5	M
10		51.4	25.8		9.1		18.1	18.5	K	10	12	14.2	17.2		10		51.2	5.3		8.7		53.4	57.5	K
9.9	44	6.2	12.7		10		21.0	39.5		9.7		58.9	10.2		9.8		54.8	21.2		9.7		57.5	51.9	
6.8		7.4	30.3	K	9.4	57	4.2	18.6		7.7	13	22.1	27.7	K	9.1	29	9.2	5.1	Sj	9.8	47	26.4	8.8	
9.6		24.7	52.1		9.0		48.6	13.5	K	9.7		32.2	35.2		8.9		12.9	48.0		9.3		30.3	47.8	
9.8		31.5	5.8		9.8	58	34.5	48.5		9.5		33.0	19.9		9.3		14.2	32.9		9.0		58.3	4.8	K
9.8		46.6	6.0		9.0		55.5	45.4		9.8		39.7	39.5		10		49.5	33.5		9.0	48	37.4	51.4	M
8.3	45	24.3	27.8	K	9.8	59	18.3	32.5		9.0	14	28.6	30.4		9.1	30	6.6	57.2	K	9.7		46.3	5.4	
9.9		39.2	1.0		10		23.7	58.8		9.7		33.8	43.2		9.4		30.5	38.6		9.6	49	10.7	7.0	
9.6	46	44.4	52.0		8.7		47.1	40.3	M	9.2		39.9	52.8		9.6		43.1	58.5		9.3		17.4	7.2	
10		49.4	4.3		9.4		49.4	29.2		10		57.4	17.0		8.8		47.2	15.6	M	9.5		21.1	18.5	
10		51.6	50.7		7.6	0	20.5	44.3	K	9.9	15	1.9	11.6		9.4		53.7	11.4	M	9.7		24.3	5.0	
10		52.8	56.2		9.4		32.3	55.8		8.9		32.4	47.6	M	9.8	31	1.1	52.0		9.0		47.7	30.1	
10	47	6.6	51.6		8.5		41.3	0.7	Sj	9.7		48.6	18.6		8.7		42.1	54.7	M	8.6		47.8	43.5	M
10		9.1	53.6		9.8		50.7	12.1		9.7	16	10.5	19.6		8.7		51.1	8.0	Sj	10	50	15.7	6.5	
9.1		45.2	14.8	K	9.1	1	4.1	20.6	K	9.7		14.5	37.0		9.3		57.8	20.8		9.3		20.9	54.7	
9.3		58.7	58.8		9.8		42.6	20.6		9.6		29.4	59.1		8.6		58.4	27.5	K	9.4	51	8.3	57.8	
9.5		59.2	16.7		9.5		45.0	10.7		9.1		47.4	50.1		10	32	14.1	54.0		10		9.5	7.6	
9.5	48	21.8	20.4		10	2	12.9	11.0		10	17	7.3	55.2		9.5		16.2	55.3		9.0		14.7	35.0	K
8.5		28.9	28.5	K	9.1		15.9	37.4		10		24.0	23.0		10		38.7	13.3		10		46.4	11.8	
10		31.3	59.5		9.3		17.0	36.2		9.6		33.0	49.1	M	8.0		58.2	56.0	K	9.8	52	17.1	24.8	
9.6		43.0	37.9		9.8		42.3	11.7		9.0	18	6.4	21.5		9.1	33	7.5	43.6	M	10		41.3	30.1	
9.6		44.0	35.9		9.0		42.5	55.0		7.2	19	1.3	41.4	K	10		55.2	51.3		8.5		53.9	1.7	K
9.9		48.8	25.1		10		52.4	40.8		9.3		23.7	46.1	M	10	34	28.1	12.0		9.8	53	27.0	18.9	
9.7	49	23.1	12.0		9.5		57.4	6.3		9.3		29.2	36.1		7.6		35.9	49.4	K	9.2	54	24.1	30.2	M
8.2		34.5	5.8	K	9.1	3	8.6	8.1	K	10		29.2	34.4		8.7	35	10.6	3.5	Sj	9.8		32.6	31.2	
9.5		34.9	46.7		10		31.5	53.1		9.5		37.3	8.6		8.8		11.5	45.8	K	9.5		32.7	49.7	
10		45.1	45.6		9.3		46.9	40.0		9.1		39.8	50.2		9.8		42.2	17.4		10		46.4	10.7	
10		47.5	36.0		8.6	4	12.3	26.6	M	10	20	24.4	40.4		9.1	36	10.5	12.5		10		49.7	35.0	
9.1		54.6	45.7		9.7		25.1	3.7		10		27.2	16.8		10		13.6	23.8		7.7	55	25.2	36.8	K
9.8	50	11.1	45.3		10		44.1	58.8		9.8		33.2	44.1		10		18.2	25.7		9.6		44.6	26.3	
9.6		26.2	17.9		7.8		46.0	29.7	M	8.0		58.6	51.0	Sj	9.1		22.1	49.3	M	9.8		56.8	6.7	
9.3		44.7	19.7	M	9.0	5	0.6	14.5		9.5	21	1.4	11.3		9.1		23.5	50.2	M	10	56	36.5	20.5	
9.0		46.6	46.1	K	9.3		56.4	8.0		7.7		16.9	33.8	K	8.2		35.2	19.1	K	8.4		42.5	39.8	K
9.0	51	5.1	54.7	K	9.4	6	10.1	47.6		9.5		26.9	14.4		9.8	37	15.4	2.9		9.3	57	22.2	48.2	
9.2		21.0	37.9		9.4		25.5	3.1		9.9	22	36.7	42.9		9.8		46.2	14.0		9.5		51.5	16.9	
10		45.1	50.0		9.1		29.5	11.8	K	9.6	23	25.9	21.3		10		51.5	11.1		8.0		56.8	43.6	K
9.8		49.2	0.7		9.4	7	6.9	55.8		9.0	24	1.2	38.7	M	10		53.0	8.0		8.4	58	6.8	39.5	K
9.8		49.6	17.7		9.0		8.0	50.6		9.4		6.8	40.4		9.8	38	19.1	49.6		9.6		34.9	2.8	
9.8		55.4	6.1		9.2		22.7	42.6		10		47.7	3.8		8.8		43.8	41.6	K	9.0		36.2	45.6	K
9.7	52	12.0	42.7		10		31.8	24.5		7.2	25	10.8	19.6	K	9.9		52.0	31.6		10	59	31.2	36.8	

3201—3260					3261—3320					3321—3380					3381—3440					3441—3500				
	10h—11h		−5°			11h		−5°			11h		−5°			11h—12h		−5°			12h		−5°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.1	59	33.8	44.9	M	9.3	14	42.2	8.4		10	31	16.3	12.4		8.7	46	59.8	58.7		10	3	33.3	10.7	
9.5		40.0	28.8		10	15	5.7	20.9		8.7		35.6	28.7	M	8.7	47	20.2	9.1	K	8.2		42.3	44.8	K
9.1		49.5	19.8	K	9.4		10.8	16.9		9.3	32	14.3	34.7		9.8		25.7	17.2		9.7		46.9	3.9	
10		54.3	1.4		10		14.0	52.9		9.5		18.3	24.0		9.2		30.4	50.7		8.0		53.8	6.8	B
10	0	26.8	55.8		9.1		35.9	24.2	M	8.8		18.7	48.0	B	9.0	48	0.7	24.5	M	10		59.1	29.4	
10		34.0	33.0		9.3		38.8	32.1	M	9.0		22.1	12.5	M	9.4		1.5	9.5		9.5	4	1.9	53.8	
9.8		39.3	59.4		9.5		42.2	29.4		10		34.3	41.7		10		40.7	14.6		9.4		14.2	59.2	
9.7		52.7	39.7		9.8	16	6.0	57.8		9.0		44.4	18.2		9.1		42.2	17.3	M	9.4		48.8	29.9	
9.2		56.4	31.4	M	9.7		9.7	14.7		9.5	33	1.8	17.7		9.5	49	17.1	36.7		9.4		55.3	9.7	
9.8		58.9	37.5		9.7		13.1	16.5		10		6.8	17.1		9.5		37.4	1.6		9.2		58.7	32.4	
8.8	1	11.6	37.8	M	9.3		26.3	51.4		9.4		23.3	56.2		9.4		50.2	36.7		8.5	5	29.6	59.7	K
9.8		21.5	32.4		9.5		28.6	27.9		9.5		57.3	52.9		9.9	50	5.6	42.3		9.5	6	20.1	28.1	
9.1		28.0	21.4	K	9.8		43.5	34.9		8.7	34	23.2	52.5	K	9.2		36.4	19.2	M	9.1		22.8	41.4	M
9.9		48.3	22.8		9.5		43.8	55.4		8.7		28.4	14.0	M	9.8	51	7.2	19.1		10		47.4	41.0	
9.1	2	17.9	22.8	K	7.0	17	0.2	6.3	K	10	35	3.3	7.5		9.3		15.1	21.2		9.1		51.7	50.7	
8.3		26.0	1.3	K	8.8		26.7	58.3	K	9.2		9.5	50.0		7.8		36.3	50.7	Sj	var	7	10.4	13.8	B
9.5		58.8	1.7		9.8		38.3	55.7		9.3		13.2	57.8		9.1		38.7	23.1	M	8.8		12.2	52.6	K
8.2		59.2	54.2	K	8.8		52.7	4.2	K	8.5		23.8	36.6	K	10	52	6.1	57.4		9.5		38.1	1.9	
9.9	3	2.4	5.9		9.8	18	2.9	32.5		10	36	6.2	56.5		9.1		17.6	25.8		8.5	8	7.2	7.6	K
9.3		30.1	57.9		9.8		7.1	37.0		6.5		30.3	51.8	Sj	9.4		26.1	30.5		10		12.6	11.9	
8.7		30.4	12.9	M	8.9		8.5	12.5	K	9.7		35.9	2.9		10	53	13.7	10.5		9.5		22.1	36.2	
8.7		35.9	21.8	M	9.4		19.2	27.6		9.0		58.3	45.3	M	9.5	54	6.7	3.9		9.8		24.5	32.9	
8.9		37.0	32.3		9.6		31.1	31.2		10	37	2.7	31.1		8.2		30.1	28.3	M	8.0		26.4	20.8	K
10		51.3	5.2		9.7		32.4	7.7		9.8		38.4	2.5		9.8		45.6	44.3		9.5		48.9	23.1	
10	4	22.4	55.6		9.4		47.8	57.0		9.8		43.2	54.7		8.9		53.5	1.6	K	8.1		55.9	1.9	K
9.6		46.1	18.0		9.5		51.7	16.2		8.2		53.6	41.6	K	7.8	55	20.0	39.6	K	9.3		56.4	49.4	
9.8		46.3	51.9		10	19	1.5	37.6		9.2	38	26.3	16.6		10		36.1	28.4		9.1	10	16.2	29.6	K
9.6		55.8	15.6		9.9		13.2	49.7		10		33.3	17.3		9.7		37.0	30.4		8.2		27.1	36.9	K
9.5	5	14.8	45.6		9.4		44.1	53.6		8.3		44.5	49.9	K	9.4		52.7	58.5		9.8		50.9	40.6	
9.5		33.2	53.0		9.0		51.5	49.8	M	9.5	39	18.0	43.0		9.4	56	7.0	46.0		9.6		54.2	31.6	
10		39.3	31.4		9.8	20	21.4	16.6		9.8		34.2	21.0		9.4		13.7	34.7		9.0	11	11.4	50.6	M
10		50.2	48.2		10		34.0	35.3		9.8		53.7	12.1		9.2		14.4	37.2		8.9		16.2	52.0	K
9.9	6	13.7	58.6		10		44.6	39.0		8.3	40	8.8	39.9	K	8.9	57	26.1	23.5		9.5		35.7	5.2	
9.8		55.6	6.1		8.9	21	9.3	18.2	L	9.8		16.8	25.0		9.4		59.5	56.2		10	12	3.9	48.8	
10	7	1.4	4.1		9.7		12.1	7.0		9.0		28.8	26.2		10	58	8.0	10.1		8.8		11.1	2.8	K
9.6		23.0	20.4		8.6		17.8	22.9	K	9.5		39.5	1.6		6.7		9.1	2.0	K	8.7		57.2	44.9	K
10		24.1	56.5		9.7		27.5	43.6		9.5		59.7	31.4		9.8		19.3	28.2		9.8	13	0.7	12.6	
9.4		38.7	45.9		9.8		45.6	1.7		9.2	41	4.8	1.8		9.4		20.4	44.1		9.5		23.4	19.7	
9.5		46.5	27.5		9.1		49.2	54.0	M	9.3		18.7	25.7		8.0		23.8	2.8	Sj	9.6		35.3	43.4	
9.6		50.5	28.6		8.7	22	19.2	30.5	K	9.8		23.8	17.2		8.8		25.8	44.0	K	9.5		53.6	7.1	
10	8	11.3	4.3		9.6		30.2	16.8		10		30.3	33.1		9.4	59	13.8	4.0		9.5		58.0	37.9	
9.1		14.8	21.7	K	9.7		47.5	44.7		10	42	27.2	6.3		8.7		25.4	52.9	K	9.4	14	6.3	5.2	
9.7		28.4	0.8		9.0	23	7.7	31.0	M	9.9		32.8	11.0		7.8		47.1	16.0	K	9.0		16.9	21.8	M
9.8		45.8	15.0		7.6		28.2	53.3	K	9.3		43.8	12.6		7.0		48.0	57.2	K	9.8		30.9	42.7	
9.8	9	1.0	58.0		9.1		59.2	22.8	M	10		47.1	2.6		9.4		51.9	16.0		9.5		48.1	37.4	
9.4		42.7	43.7		9.8	24	10.6	4.1		10		57.2	52.8		10		52.9	54.8		10	15	17.1	21.9	
9.0		43.1	52.7	M	6.5		33.8	40.2	K	8.0	43	5.2	24.0	K	9.5		53.5	2.7		7.2	16	0.7	18.7	K
8.9	10	24.5	4.2	K	9.8		36.7	10.2		9.9		22.2	43.5		9.5		57.1	31.7		9.4		43.1	10.7	M
9.4		28.6	57.6		8.5	25	9.4	0.3	K	9.3		33.6	19.6		9.0	0	12.7	4.4	B	9.8		45.2	6.6	
8.3	11	3.3	6.1	K	9.8		23.6	28.2		8.5		36.8	23.5	M	9.3		22.8	40.3	M	9.7		58.2	30.6	
9.8		21.2	12.7		9.4		39.1	41.5		9.1	44	4.1	49.5		9.5		34.3	55.4		10	17	28.6	55.4	
9.8		26.7	17.9		9.4	26	4.0	41.9		9.4		36.8	12.6		9.2	1	12.5	1.8	M	9.3		58.8	24.5	M
10		58.1	2.6		8.0		14.1	44.2	K	9.1		51.2	28.7	WC	9.3		52.8	20.0		9.2	18	0.5	48.0	
9.0		59.2	8.6	K	9.6	27	45.2	9.0		10	45	1.7	31.5		9.9	2	0.3	23.8		9.4		22.0	26.3	
9.3	12	9.7	26.9		8.6		51.6	41.6	M	9.8		16.5	26.0		9.9		9.1	52.5		10		25.0	23.1	
9.8		10.6	38.0		9.2	28	20.7	56.3		9.9		26.3	57.4		9.5		19.3	28.9		9.8		41.5	12.8	
9.7		42.0	59.7		8.8		36.7	16.9		8.7		33.7	25.8	M	9.4		20.8	31.6		8.8	19	0.0	13.9	
9.8	13	50.2	29.2		10	29	30.5	0.4		10	46	1.7	15.5		9.1		42.3	29.0	M	9.7		7.7	50.2	
9.6	14	1.9	7.2		9.8		31.4	18.0		9.3		38.2	59.6		9.2		55.4	39.3		9.8		26.4	26.7	
9.3		2.8	7.6		9.0		58.9	27.9		9.0		51.5	22.2		9.4	3	14.0	47.7		8.5		31.7	15.1	K

3501—3560				3561—3620				3621—3680				3681—3740				3741—3800			
12h		—5°		12h		—5°		12h—13h		—5°		13h		—5°		13h		—5°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.4	19 33.6	40.1	M	8.8	37 16.6	22.2	K	8.5	56 41.8	53.2	K	10	15 43.4	16.8		9.3	32 10.7	35.9	
9.4	35.2	25.6		9.8	38 45.7	12.9		9.2	53.8	39.5		9.8	16 1.6	45.1		9.5	31.2	36.5	
8.9	41.1	43.7	K	10	39 4.1	30.3		10	57 14.4	49.4		10	20.8	57.1		9.5	35.7	46.7	
9.8	20 3.5	55.0		10	21.4	36.9		9.6	31.3	17.5		8.5	59.9	26.0	K	9.6	58.0	2.0	
9.3	34.0	51.9		9.5	25.5	49.3		8.3	54.6	26.4	K	9.7	17 25.4	19.6		9.0	33 2.2	32.5	
7.8	21 23.9	43.9	K	10	35.7	33.2		9.6	58 8.2	58.0		9.1	30.1	53.0		9.3	26.6	12.9	K
9.1	33.1	47.5		10	40 2.8	16.7		10	15.7	24.5		9.5	18 3.2	9.8		8.5	29.7	37.1	
9.8	41.2	33.4		8.8	3.1	5.6	K	9.8	47.2	53.2		10	29.3	27.7		9.3	44.1	32.8	
10	50.8	41.4		6.3	4.4	30.2	K	9.4	59 17.9	10.7		10	33.3	30.8		9.8	51.1	13.0	
9.7	22 14.6	32.7		9.8	33.7	12.9		10	18.3	5.6		10	38.3	29.3		10	34 24.6	58.2	
9.6	19.5	5.8		8.8	42.5	9.8	K	9.5	22.0	32.3		10	49.8	57.5		10	51.4	13.2	
9.2	35.2	55.7		neb	41 7.5	0.6		9.4	25.3	39.7		9.3	59.1	34.8		10	59.3	19.9	
7.5	36.0	12.9	K	9.2	7.7	5.7		9.3	37.4	22.0		8.3	19 14.2	32.6	K	10	35 9.4	46.8	
9.8	38.0	35.0		9.8	22.2	59.1		7.8	41.2	18.2	K	7.8	21.2	10.5	K	9.3	34.7	49.3	
9.1	40.0	23.4		9.1	33.2	55.1		9.3	58.0	9.1		10	23.5	13.9		9.0	36 10.2	27.2	
8.7	56.5	13.6	Sj	10	38.0	1.8		8.8	0 29.5	30.3	K	10	29.5	6.3		8.7	37 12.7	26.2	L
9.5	23 10.1	28.1		8.9	46.1	1.7	B	9.8	1 8.0	31.4		9.6	20 22.6	36.9		9.5	21.1	41.9	
9.3	12.4	15.2		9.0	42 9.1	17.4	K	9.3	17.9	4.3		10	25.2	34.5		7.5	24.3	16.4	K
9.6	24 20.5	10.7		9.7	11.2	48.8		9.3	18.3	3.8		10	41.2	32.3		9.4	53.2	46.6	
9.8	42.3	20.8		9.8	38.5	46.7		8.0	19.4	13.1	K	10	50.3	17.0		8.8	38 24.7	43.3	K
9.1	25 3.1	17.6	M	8.9	43 10.9	40.1	M	8.5	20.5	40.3		9.0	21 8.8	28.1		9.8	39 26.7	46.6	
9.8	3.6	8.7		8.5	26.1	16.3	K	10	29.9	4.8		7.0	30.6	12.0	K	6.8	51.3	58.6	Sj
10	19.9	59.4		9.5	47.2	43.4		9.3	2 10.7	17.3		9.6	22 22.0	35.8		9.6	53.6	23.4	
9.6	41.6	29.5		9.0	44 4.8	33.1		9.0	28.9	0.0	K	9.7	35.7	54.0		9.2	41 32.6	40.0	
9.0	26 2.1	45.5		8.4	10.6	20.4	L	9.7	52.9	19.8		10	42.4	8.2		9.8	43 34.4	41.0	
7.8	27.9	58.6	K	9.3	21.5	1.2		9.3	3 8.5	38.6		6.6	52.9	43.3	K	8.8	48.8	4.4	
9.7	32.8	59.9		9.9	32.3	55.3		9.8	25.1	44.2		9.4	58.1	36.1		9.4	50.9	19.4	
9.6	43.7	22.5		8.2	43.1	17.9	K	10	55.0	58.7		9.7	23 4.3	21.1		9.9	44 2.0	4.7	
9.8	27 17.6	27.0		9.5	49.1	49.2		9.2	4 9.2	1.5		10	17.9	1.6		10	6.0	22.9	
9.1	34.4	53.3	M	9.1	45 37.2	13.9	M	10	23.0	46.5		9.1	45.3	25.7		9.8	30.6	37.1	
9.5	28 26.9	10.6		9.4	41.3	10.3		10	40.3	34.1		9.7	52.2	31.5		9.1	45 1.2	11.9	
9.1	44.9	37.1		9.4	50.3	9.4		9.2	44.2	10.6		10	24 7.4	9.2		9.5	6.1	7.1	
9.8	29 2.6	56.5		10	46 42.3	54.4		8.8	51.2	43.8	M	8.2	19.0	15.9	K	9.8	16.2	0.1	
8.3	6.3	16.1	K	9.8	50.2	56.9		10	5 27.1	44.2		5.5	26.1	30.2	K	8.3	19.9	46.3	K
5.9	19.5	1.4	K	9.5	50.8	8.4		9.2	27.6	18.3	M	8.9	28.4	1.0	K	7.5	46 3.5	28.3	Sj
9.0	19.7	17.4	K	9.5	47 28.6	32.7		9.1	48.6	16.7	M	9.3	44.5	49.5		8.5	36.5	3.6	K
9.7	30 17.9	37.3		9.8	36.2	4.1		9.5	6 25.3	29.0		9.2	57.7	11.6	K	8.0	47 22.5	10.0	Sj
9.1	38.4	47.7		9.1	48 26.3	16.6		8.9	28.9	2.7	K	10	58.1	41.7		8.4	25.4	0.7	K
9.8	31 22.9	31.9		9.8	37.3	10.5		9.2	59.4	12.0	K	9.8	25 0.7	57.5		9.0	48 34.7	47.0	K
9.5	53.1	48.2		8.5	49 0.5	32.0	M	9.6	7 14.1	13.2		9.7	40.2	23.6		8.3	48.3	41.7	B
9.1	56.3	25.5		9.5	21.3	40.9		9.8	27.5	55.0		10	26 8.4	11.8		9.0	55.2	9.6	
6.5	32 1.2	18.0	K	9.0	50 6.9	9.3		10	35.3	29.0		10	27 1.3	26.6		9.0	59.5	23.5	Sj
8.5	40.9	11.0	K	8.6	10.5	36.4	K	10	8 50.5	10.1		9.6	14.0	56.2		9.5	49 27.5	12.8	
9.8	46.5	50.0		9.0	55.9	15.5	Sj	9.8	9 19.3	55.6		10	19.4	0.9		10	38.3	8.2	
9.1	49.1	33.0	K	7.3	51 29.8	18.2	Sj	8.7	10 4.2	37.8	Sj	9.3	22.9	22.0		9.8	50 35.9	3.0	
9.8	33 1.0	46.9		9.4	52 0.0	36.6		10	19.6	0.8		10	23.1	1.7		9.4	44.6	49.3	
9.8	42.7	21.0		10	44.7	17.5		9.5	35.3	35.1		10	24.2	6.8		9.1	47.7	42.1	Sj
9.4	51.2	20.3		9.5	53 2.2	17.5		8.1	47.1	1.1	Sj	9.7	32.1	2.1		10	51 14.4	8.9	
9.5	34 2.4	53.7		9.4	7.9	47.3		7.5	11 1.8	30.0	K	9.8	28 0.8	46.7		8.5	18.5	51.7	K
8.3	18.9	36.8		10	22.7	18.4		9.8	34.3	30.8		8.0	10.2	24.9	K	9.7	26.3	28.6	
9.7	50.6	48.0		9.5	28.9	25.4		9.5	38.5	15.6		10	50.6	44.8		8.9	29.2	53.9	K
9.7	59.0	20.8		9.4	35.7	19.6		9.3	45.9	54.2		10	52.4	10.4		9.4	52 20.9	8.3	
9.5	35 3.3	27.9		10	56.8	6.8		7.9	12 13.4	46.5	K	9.5	56.6	6.8		9.5	45.6	0.7	
9.8	47.7	21.7		9.5	54 9.6	49.3		9.4	17.7	11.7	M	8.9	29 13.4	48.9		8.9	57.5	41.4	
10	56.9	49.2		9.6	19.9	11.0		9.1	14 2.5	54.9	M	8.7	43.1	8.7	L	8.6	53 30.8	46.0	
9.3	36 2.0	28.1		8.8	55 16.2	44.5	L	9.9	22.2	45.4		10	44.2	31.0		9.0	54 15.5	41.7	
9.7	31.3	38.2		9.5	30.4	15.2		10	33.4	31.4		8.1	30 5.0	54.6	B	9.7	55 7.5	42.2	
9.7	57.5	39.9		9.0	42.9	20.4	K	7.2	59.3	26.2	K	9.8	11.6	6.8		8.0	22.8	48.5	Sj
10	37 3.5	47.2		8.2	53.2	39.0	K	9.3	15 12.6	16.6	K	9.5	32.2	36.9		8.6	56 37.5	46.2	K
9.4	15.6	48.5		9.5	56 18.3	58.5		8.9	39.7	0.4	K	10	31 24.2	29.8		9.5	37.9	26.3	

3678: 59.44 26′11.7 B_0, Ep. 1870.58

3801—3860					3861—3920					3921—3980					3981—4040					4041—4100				
	13h—14h		−5°			14h		−5°			14h		−5°			14h—15h		−5°			15h		−5°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.8	57	3.4	7.9	K	10	13	21.9	48.2		9.8	32	38.2	49.1		9.6	51	30.1	43.4		9.5	8	19.9	30.8	
7.7		13.1	51.2	K	9.5		27.8	31.6		9.8		38.3	55.8		9.4	52	5.7	20.2		9.5		32.3	19.4	
9.3		13.3	27.4		9.2		32.1	19.2	K	9.6		56.7	37.4		9.1		15.8	18.1		9.8		50.4	41.7	
8.8		17.7	41.5	K	8.8		41.7	9.5	K	9.2	33	2.8	16.2	K	9.6		20.8	40.1		8.9	9	15.8	18.5	
9.1		25.5	23.4		10	14	13.1	26.4		9.8		8.1	9.2		9.4		46.2	39.4		9.5		36.8	59.1	
8.7	58	45.0	24.6	K	9.6		27.8	0.2		9.5		12.8	42.5		9.8		54.0	33.8		9.5		56.3	23.1	
9.5		50.2	46.9		9.5		28.5	10.0		8.3		21.5	49.6	K	9.0	53	29.4	22.1	M	9.3	10	20.6	59.4	
9.5		59.3	9.7		8.0	15	33.8	33.9	Sj	8.9		30.7	0.8	K	9.4		34.4	4.5		9.7		27.2	46.5	
10	59	28.3	12.8		8.4		35.0	51.9	K	9.5		31.1	5.4		9.8		47.7	34.0		9.7		31.4	30.5	
10		55.0	42.7		10	16	24.1	28.7		8.9		33.2	23.1	K	9.9		47.7	28.1		9.5		32.4	3.4	
9.0	0	15.9	36.5		9.8		37.8	41.1		9.2		45.5	50.9		9.8		48.1	12.5		9.4		43.2	4.7	
9.2		50.3	8.8		9.8	17	20.3	40.6		9.3		46.5	48.7		9.6		50.1	33.8		9.5	11	53.7	14.6	
9.1		54.7	47.3		9.8		21.7	10.3		9.6	34	0.2	23.1		9.5	54	42.9	49.9		8.9	12	8.5	57.5	
9.5	1	20.5	3.9		9.4		30.7	2.1		8.3	35	2.7	20.6	S	9.2	55	1.0	2.2	Sj	9.4		29.6	44.7	
10		21.1	28.0		9.1	18	35.2	25.0		9.3		4.1	21.0	M	9.5		21.8	44.9		9.8	13	0.4	29.3	
9.8		29.6	54.3		9.6		42.3	50.0		4.2		25.6	1.5	K	9.5		35.3	53.3		9.8		28.8	36.2	
10		43.0	33.8		9.0	19	16.8	11.7		9.8		56.7	56.0		9.3		35.6	4.0		6.0		28.8	17.6	K
9.4		47.3	20.2		10		17.0	49.7		9.8	36	4.4	35.3		9.5		42.9	17.2		9.5		37.7	16.8	
9.6	2	7.8	10.7		9.4		43.9	55.1		9.8		6.7	22.8		9.0		53.4	19.9	M	9.3	14	30.3	34.7	
9.7		33.0	8.7		6.5		48.3	27.5	K	10		10.9	45.0		9.0	56	18.8	55.2		8.6		31.1	4.8	L
9.4		39.0	6.9		8.8	20	13.7	3.2	Sj	7.6		45.7	46.2	K	9.5		25.5	48.7		9.1		59.2	13.7	
9.3		43.9	30.7		9.5		43.4	4.9		9.1		50.8	0.5		9.4		33.0	30.1		9.4	15	7.2	16.0	
7.3		52.7	52.2	B	9.5		46.0	1.7		9.0	37	11.6	30.7		8.8		43.5	32.3	M	9.0		34.1	11.3	Sj
6.8	3	22.3	17.3	K	9.5	21	1.6	45.6		9.1	38	20.0	41.6	M	9.5		52.9	13.2		9.8	16	27.4	54.4	
7.2	4	5.3	10.1	L	9.5		5.0	57.9		9.7		38.5	50.1		8.8	57	4.6	36.5	M	9.4		36.5	5.6	
7.7		17.9	26.8	K	9.2		25.3	1.8		9.8	39	2.3	31.5		9.1		16.5	48.8	M	9.0		44.5	42.0	
8.7		26.8	11.0	L	9.5		37.7	27.3		9.8		16.7	58.6		9.6	58	15.4	36.1		8.8	17	10.1	46.2	K
9.4		40.3	12.8		9.2		54.0	23.1		8.8		25.3	25.6	M	9.7		20.6	4.6		9.5		13.4	3.1	
8.7	5	4.2	40.4	M	10		57.0	18.9		9.3		31.4	39.5		9.7		47.1	42.7		7.5		23.5	44.0	K
9.6		4.4	43.1		neb	22	2.0	10.3		9.6		58.7	30.0		9.7		52.5	37.7		7.7		26.2	24.0	K
9.5		46.9	41.0		9.5		4.3	37.3		9.4	40	15.5	11.1		8.8	59	17.3	16.5	B	8.5		44.1	13.5	L
10		52.8	51.7		8.2		5.9	10.9	B	8.0	41	28.9	8.4	Sj	9.7		47.8	16.7		9.6		48.3	48.3	
9.5		54.3	26.1		9.8		18.3	28.9		8.0		43.9	11.1	Sj	9.7		54.5	43.7		9.6	18	11.0	18.6	
9.2	6	5.7	47.0	Sj	8.9		47.2	30.1	K	9.8	42	20.9	7.1		9.6	0	2.0	56.5		9.5		18.4	57.4	
9.0		22.8	11.0	K	9.1	23	1.2	41.2		9.4	43	23.8	46.6		9.8		26.3	14.5		9.5		53.0	42.5	
9.1		32.4	34.0		7.8		25.7	9.5	K	9.8		35.4	7.8		9.2		35.4	23.4	M	8.3		50.0	9.0	Sj
7.0		48.4	15.9	K	9.5		40.2	17.4		9.0	44	4.7	39.5		7.5	1	10.0	36.3	B	9.0	19	4.4	12.5	K
9.8		50.9	5.2		9.2		59.4	57.9		9.9		8.0	50.3		8.5		16.6	4.1	Sj	8.8		4.7	23.9	M
10	7	57.2	54.3		9.2	24	25.7	20.2		9.6		50.8	40.6		9.6		19.3	32.8		8.0		28.6	18.5	K
9.3	8	4.6	26.0		10		52.0	45.4		9.8	45	19.5	53.2		9.5		22.2	7.3		9.5	20	11.7	59.9	
9.3		4.6	43.8		9.5	25	3.2	15.1		9.5		56.9	13.8		9.0		42.8	40.6		7.8		31.4	55.5	K
9.8		8.7	58.1		9.8		25.4	53.1		9.1	46	46.3	1.2	M	9.4	2	0.7	59.9		9.8		39.2	21.5	
4.5		25.1	18.4	K	8.8		35.2	9.3	K	9.4	47	20.9	3.6		9.5		24.4	37.8		7.9		42.8	29.9	K
10		38.7	40.8		9.8	27	6.6	58.2		9.8		31.1	28.2		9.5		32.3	41.4		9.2		51.6	8.2	
6.3		45.6	56.5	B	9.3		15.9	21.0		9.3	48	15.4	50.2		9.4		57.0	42.2		9.8		53.7	27.0	
9.4		48.2	7.5		9.5		26.5	3.6		7.5		36.4	47.2	K	9.5	3	27.2	2.1		7.8	21	16.1	45.9	Sj
9.1	9	25.1	0.0	Sj	9.3		37.5	48.5		9.4	49	6.1	47.1		9.8		37.2	9.9		9.4	22	6.3	3.1	
7.7		30.2	4.2		9.6		39.0	42.0		9.5		7.3	39.5		9.8		49.7	17.5		10		33.4	27.3	
9.3	10	1.5	18.4	K	7.5		50.6	11.4	K	9.1		17.5	10.3	Sj	8.7	4	2.7	17.7	Sj	8.8	23	9.2	18.6	
9.5		5.8	29.9		9.9	28	20.2	10.9		9.4		24.0	13.9		9.5		38.6	48.8		8.9		22.9	53.5	
10		14.0	36.7		9.5	30	5.9	17.7		8.0		30.6	55.2	K	9.4	5	5.3	20.9		9.4		41.1	1.2	
7.7		20.2	18.1	K	9.3		15.7	52.0		9.2		36.7	10.4		9.5		51.5	50.2		9.0		48.9	51.8	
9.1	11	21.0	55.2		8.8		56.3	4.0	K	9.6	50	7.0	58.4		8.9	6	16.2	13.1	M	9.2	24	15.8	52.0	
9.8		39.5	54.3		9.8		58.4	46.0		9.2		33.7	44.8	Sj	8.1		49.8	24.3	B	9.6		47.2	25.2	
10		57.0	36.6		9.2		58.7	24.6		9.8		38.6	40.3		9.5	7	5.5	56.6		9.6		49.8	27.5	
10		58.5	38.8		7.8	31	23.1	0.2	Sj	9.2		46.7	40.3		9.3		8.2	0.7		9.4		58.1	40.9	
9.6	12	8.7	7.7		9.8		23.7	41.7		8.0		56.5	50.6	K	9.5		13.7	55.7		9.8	25	38.9	5.0	
9.8		14.1	20.4		9.8		24.0	21.5		8.9	51	0.8	13.0		8.7		16.3	22.7	Sj	9.4		58.1	10.4	
9.1		20.6	52.1	K	9.3		40.1	24.0		9.9		19.7	47.6		9.0	8	3.5	51.6		9.2	26	34.2	16.9	
9.4		41.8	32.1		9.5	32	1.9	58.1		9.8		20.4	25.2		8.8		16.3	4.7		6.5		41.1	12.2	Sj

4101—4160					4161—4220					4221—4280					4281—4340					4341—4400				
	15h		—5°			15h		—5°			15h—16h		—5°			16h		—5°			16h		—5°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.6	27	6.3	28.1		6.3	39	3.3	40.3	K	7.0	55	21.6	25.5	K	9.9	12	48.3	36.0		9.4	35	40.8	25.0	
9.8		11.9	56.0		9.5		30.4	45.8		8.8	56	29.2	21.6	Sj	8.3	14	34.7	19.8	M	9.5	36	5.7	2.9	
9.8		20.3	30.6		9.5	40	14.6	33.6		9.5		41.5	25.7		9.4		35.6	14.6		9.0		13.2	22.7	
9.0		34.7	27.2		9.5		43.5	15.3		9.3		45.8	55.1		9.4		44.0	14.9		8.3		43.2	24.8	K
9.9		40.6	15.6		9.0		46.6	22.7		9.1		48.1	13.3		10	15	30.4	43.2		9.4		51.8	25.9	
9.8		48.2	21.4		9.4	41	16.2	44.1		10		51.0	41.5		9.3	16	10.4	4.7		8.7	37	9.6	1.9	M
9.1		50.0	25.5		9.7		20.5	18.8		8.9		54.1	19.9	Sj	9.6		20.1	3.0		9.0		59.2	41.1	
9.3		50.1	38.8		9.8		28.9	28.4		9.7	57	19.3	42.4		9.6	17	3.4	59.5		9.1	38	37.3	50.9	
9.3		50.8	30.1		9.8		38.3	55.5		9.5		31.7	59.7		9.4		12.4	42.9		9.4		56.8	20.0	
9.4		57.8	5.1		9.2	42	4.6	21.7		9.1		39.0	14.2		9.6		20.8	13.8		8.5	39	39.0	57.6	Sj
9.5	28	4.2	22.2		8.8		21.3	3.8	K	7.8		43.2	53.4	K	9.2		24.9	7.5		9.6	40	12.6	33.2	
7.8		30.6	54.0	L	9.2		23.1	29.3		8.9		52.0	37.0		7.8		55.4	33.4	L	9.5		33.4	10.8	
9.3		30.7	18.3		9.3		35.6	24.9		9.5		54.8	56.2		8.4	18	5.9	45.8	M	9.8		34.3	3.9	
8.0		44.2	21.6	L	9.1		46.7	42.3		6.3	58	0.2	53.4	K	9.0		7.8	16.2		9.5		38.5	36.1	
9.4		46.2	18.1		9.8		59.5	18.6		6.7		16.9	44.8	K	9.5		20.0	25.9		9.5		56.8	41.2	
9.8	29	9.4	55.2		9.8	43	1.0	35.1		8.7		19.7	3.6	K	9.3		24.6	26.9		9.4	41	28.4	9.1	
7.0		12.3	33.0	K	9.8		2.7	43.3		9.0		26.8	8.9		9.3		38.2	52.8		9.5		50.7	42.0	
8.8		19.1	6.1		8.3		14.2	53.1	K	9.9		26.8	19.2		9.3	19	2.3	3.2		9.4		57.4	6.4	M
8.6		24.7	27.0	K	9.2		15.4	50.0		9.8		50.4	39.3		9.7	20	36.8	58.9		9.4	42	32.2	20.1	
9.8		25.8	37.5		9.9		44.0	40.8		9.0	59	11.5	37.5		9.2		37.1	32.3	M	8.8	43	40.5	55.3	Sj
9.1		45.8	50.1		9.0		53.1	30.0		9.1		34.4	6.2		9.5		40.7	31.4		9.8	44	8.0	30.0	
9.0		53.7	45.2		8.5		59.0	32.9	Sj	9.4		53.8	12.3		9.3		45.6	30.9		9.5		15.2	18.9	
9.0	30	6.1	14.9		9.5	44	13.3	40.9		9.5	0	18.1	59.6	M	9.5		47.6	39.5		9.8		19.7	12.0	
9.3		12.2	22.5		9.7		25.5	9.8		9.3		56.4	52.8		8.2	21	7.0	7.4	Sj	7.8		30.7	32.3	K
8.0		34.7	39.3	K	9.0	45	5.0	15.3	K	9.1		57.0	49.6		9.5		19.1	36.4		9.8		31.7	40.6	
9.5		39.2	53.7		9.0	46	15.5	18.0		8.7	1	23.7	19.0	Sj	9.4		24.5	12.5		10		49.2	37.3	
9.4		44.0	49.2		8.8		32.5	13.8		9.3		30.6	26.1		8.3		28.0	7.5	Sj	9.6	45	40.4	59.8	
8.2	31	4.1	50.7	L	9.4	47	3.5	43.1		9.3		49.8	2.1		9.8		34.7	57.8		9.8	46	1.9	36.0	
9.8		8.7	28.5		9.5		5.6	19.8		9.4	2	54.5	32.4		8.3	22	43.8	46.5	Sj	9.5		14.6	48.8	
8.5		20.6	32.9	K	9.8		27.2	56.3		9.5	3	23.5	4.1		9.5		54.6	5.0		9.5		16.8	43.5	
9.4		48.5	8.8		9.4		36.7	54.3		9.5		30.7	43.8		9.5	23	29.3	2.3		9.7		26.4	44.9	
9.5		52.3	59.9		9.3	48	2.4	39.9		9.0		50.9	12.1		9.5	24	8.9	18.2		9.2		34.9	37.7	
9.4		57.2	41.9		9.2		10.0	16.9		9.4	4	33.0	6.6		9.5		15.0	50.6		9.4		43.1	41.8	
9.3	32	34.6	18.6		9.5		13.1	47.3		8.9	5	12.2	55.0	M	9.6		50.0	4.5		5.3		51.0	54.6	L
9.2		49.7	37.5		9.2		17.6	38.9		9.7		38.8	43.7		9.4		57.6	54.0		8.8		58.0	28.0	
8.4	33	10.0	9.7	K	9.3	49	8.3	45.0		9.4		40.4	37.1		9.0	25	52.8	18.4		8.9	47	19.4	41.5	
9.4		26.2	58.4		9.8		13.5	15.9		9.8		47.0	43.3		9.2	26	36.5	44.6	K	9.5		43.1	42.5	
9.2		36.1	14.8		9.5		18.0	47.7		9.4		53.5	8.8		7.8		43.8	49.9	K	7.5	48	3.0	53.2	K
8.0		39.4	30.7	Sj	7.0		25.8	52.8	K	8.5	6	0.4	51.3	K	9.7	27	10.9	3.7		9.3		10.1	43.1	
9.8		41.3	15.0		9.0		37.1	32.5		9.7		55.7	43.4		8.9		36.6	55.5	Sj	9.8		46.3	13.3	
9.6		47.2	55.8		8.8		39.6	48.0		9.2	7	3.5	30.0		8.2		57.5	58.6	Sj	9.1		48.0	54.0	
9.8		53.8	57.3		9.7		47.6	40.9		9.1		28.2	21.8		9.5	28	43.7	26.5		9.5		51.3	10.2	
7.0	34	2.9	58.4	Sj	9.1	50	17.3	45.0		9.7	8	0.7	1.2		7.8	29	3.5	59.7	Sj	8.9	49	28.5	27.4	Sj
9.8		36.3	9.2		9.8		21.5	51.4		9.3		15.5	30.7		8.5		9.9	17.2	K	9.5		37.9	40.7	
9.0		36.9	33.6		9.4		22.4	7.4		9.2		27.9	8.6		9.1		49.9	12.8		9.3		51.9	4.8	
10		42.6	44.7		8.8		37.4	3.7	K	6.8	9	7.0	7.4	K	9.6	30	2.2	4.4		9.8		52.9	36.8	
9.6		51.2	48.5		9.3	51	29.4	10.0		8.8		17.9	51.6		9.3		14.8	45.5		9.4	50	11.5	4.8	
9.3	35	13.1	50.7		9.1		38.9	8.4	K	10		18.4	43.7		9.0		36.2	41.2	Sj	9.4		33.4	0.9	
9.8		15.9	4.4		9.8		47.5	14.8		9.6		40.8	13.9		9.1	31	10.7	49.1		9.0	51	28.4	41.3	
9.6		40.8	49.8		7.0	52	3.6	42.6	Sj	8.1		55.0	45.6	Sj	9.8		42.7	47.7		8.6		46.8	36.4	M
9.0		59.5	14.5		9.8		14.0	20.0		9.0	10	7.9	9.6		9.4		48.6	25.6		9.8	52	22.9	57.8	
9.6	36	10.3	51.6		9.5		24.5	31.4		9.2		11.4	0.1		10		57.3	44.8		9.8	54	26.0	27.6	
9.9		28.7	46.8		8.3		52.4	14.2	M	9.2		44.9	42.9		9.4	32	3.5	56.5		8.9		54.6	28.1	
9.3		35.4	47.8		9.4		58.5	24.0		9.5		47.7	21.1		6.6		17.3	47.2	K	9.8	55	6.0	51.3	
9.8		38.7	36.6		9.0	53	17.1	33.0	Sj	9.3	11	2.8	45.0		9.3		52.1	54.0		9.2	56	15.4	6.5	
9.1		40.8	22.3		8.8		57.9	17.1		8.9		5.1	38.2		9.5	33	0.9	13.8		9.5		35.3	46.6	
9.2		42.5	14.7		9.5	54	40.1	4.9		9.8		18.8	40.3		9.8		11.7	2.3		9.4	57	5.5	2.7	
7.2	37	45.7	41.3	K	9.6		45.4	10.0		9.4		27.8	45.4		9.6		25.5	53.8		9.0		12.6	23.6	Sj
9.0		58.7	37.4		9.1		48.2	26.6		9.8		32.4	47.6		9.7	34	14.4	18.7		9.2	58	8.4	30.4	
9.8	39	0.1	23.1		9.0		55.6	36.8		9.6		51.5	46.5		9.5		19.6	51.0		9.5		18.1	25.5	

4401—4460

	16h—17h	−5°	
m	m s	′	
8.3	58 23.9	58.0	K
9.8	24.6	40.7	
9.6	27.3	40.7	
9.5	38.7	57.9	
9.5	44.4	31.0	
9.3	55.6	42.7	
9.5	59 30.2	0.6	
8.8	0 40.1	6.0	Sj
8.0	1 7.0	0.0	K
9.3	2 47.9	53.7	
9.3	3 5.4	55.0	
8.3	13.1	20.7	Sj
9.2	31.3	7.2	
9.4	36.5	58.9	
9.8	4 7.9	34.2	
9.8	35.9	4.2	
10	5 15.4	7.9	
9.5	6 36.3	55.5	
9.7	7 48.3	5.0	
9.4	55.4	18.4	
9.6	8 1.1	8.1	
8.8	9 59.0	2.7	K
9.6	10 27.0	12.2	
9.8	27.5	26.9	
9.7	34.4	0.2	
6.5	12 13.4	45.2	K
9.2	18.4	13.7	
9.3	30.1	6.1	
8.3	35.3	20.9	L
9.6	13 17.4	51.1	
9.8	55.1	58.8	
9.7	14 40.3	8.3	
9.7	50.4	11.7	
9.1	50.4	30.4	M
9.5	15 38.7	53.5	
8.2	39.6	17.8	K
9.5	59.2	31.5	
8.0	16 33.0	11.0	Sj
9.5	38.0	29.6	
9.1	17 12.2	53.6	
9.8	15.9	12.4	
9.8	18.2	9.3	
9.1	18 20.1	29.6	
8.9	24.3	17.3	
9.1	19 18.0	59.0	
9.5	32.3	36.4	
8.8	39.0	36.6	Sj
9.3	20 5.8	54.9	
8.5	58.3	31.0	K
6.6	22 2.5	47.8	K
9.5	11.6	47.6	
9.5	23.0	36.1	
8.7	46.6	58.4	K
8.5	55.7	12.7	K
9.1	23 11.7	31.1	Sj
9.5	42.8	54.9	
8.8	24 3.9	33.1	R
9.3	49.8	55.2	
9.8	55.3	31.8	
9.2	25 24.7	31.0	

4461—4520

	17h	−5°	
m	m s	′	
6.2	25 45.6	37.8	K
9.8	26 3.4	1.7	
9.8	21.7	46.8	
9.8	27 29.8	59.1	
7.5	44.6	50.0	Sj
9.8	28 44.1	45.9	
8.8	30 10.7	5.2	M
9.5	15.2	30.4	
9.8	16.0	26.1	
9.1	43.7	13.2	
9.8	52.7	27.2	
8.8	31 4.4	35.0	Sj
9.4	4.7	20.8	
9.7	17.2	47.8	
8.2	18.9	25.5	Sj
8.6	47.5	46.2	
9.0	32 20.7	18.0	
9.5	24.7	24.0	
9.4	54.0	45.2	
9.0	33 3.6	15.5	
8.3	23.8	55.9	K
9.5	26.2	35.0	
9.5	40.2	32.2	
9.1	55.1	12.6	
9.7	34 43.1	45.4	
9.4	35 20.8	57.2	
9.1	58.8	59.6	
7.4	36 15.8	51.3	Sj
9.4	37 28.6	33.7	
9.5	31.8	10.0	
9.2	45.5	50.9	
9.8	54.6	49.0	
9.3	59.9	39.7	
9.8	38 14.8	41.1	
9.2	34.3	40.5	
9.6	53.4	1.8	
9.4	59.3	38.2	
9.5	39 12.8	56.3	
9.5	13.4	38.0	
9.5	16.2	16.8	
9.6	40 0.8	39.2	
9.6	38.6	51.9	
9.5	41.8	23.8	
9.8	41 30.4	55.4	
9.8	48.0	0.8	
9.4	59.3	30.8	
10	42 27.1	54.3	
9.4	34.0	40.7	
8.2	43 1.2	17.1	Sj
9.4	40.1	11.9	
9.0	44 0.7	35.0	
9.3	8.2	29.2	
9.8	17.4	59.3	
8.5	34.5	23.4	M
9.8	40.6	8.1	
9.0	42.0	41.4	
8.8	50.8	16.8	K
9.9	53.3	43.2	
6.7	53.6	13.4	K
9.5	58.9	52.5	

4521—4580

	17h—18h	−5°	
m	m s	′	
7.8	45 8.2	18.7	Sj
9.4	23.8	24.2	
7.2	29.4	53.4	K
9.6	46.8	35.0	
10	50.2	38.5	
9.1	46 6.4	44.2	
9.3	11.1	0.1	
9.2	23.4	48.7	
9.6	57.4	35.5	
9.4	47 3.4	2.8	
9.2	8.6	2.4	
9.4	44.3	23.7	
9.9	48.7	50.9	
8.3	52.8	1.3	Sj
9.5	48 17.4	5.7	
9.5	35.3	26.9	
8.0	36.0	17.6	M
9.6	58.2	40.4	
9.2	49 4.3	53.2	
9.6	26.2	39.5	
8.7	50 9.0	40.2	M
7.5	51 1.3	24.3	Sj
7.3	21.2	1.8	Sj
9.3	24.3	22.1	
9.8	38.0	47.2	
9.4	41.9	5.5	
9.2	57.4	57.8	
9.2	57.8	51.5	
9.1	52 6.6	48.4	
8.9	10.3	24.4	
9.4	52.4	53.8	
9.4	52.6	33.1	
9.8	57.3	54.7	
9.5	59.3	35.5	
8.8	53 10.2	18.4	
9.5	56.0	0.4	
9.8	59.8	56.5	
9.2	54 19.7	20.6	
7.8	38.1	43.8	K
7.0	55 2.7	20.9	Sj
9.6	22.6	46.3	
9.5	22.8	37.0	
9.6	26.6	51.3	
8.9	56 15.8	57.4	
9.3	27.7	20.3	
9.7	57 17.3	39.8	
8.7	56.0	36.6	Sj
9.5	58 16.9	53.7	
9.5	37.8	46.6	
9.8	44.0	35.1	
9.0	57.9	4.7	
9.5	59 34.5	30.8	
9.7	0 18.3	58.0	
9.2	28.1	58.9	M
9.8	39.6	43.0	
9.0	48.7	4.4	
8.3	1 2.8	38.7	Sj
9.3	8.5	14.4	
9.4	38.7	38.5	
9.2	42.8	41.8	

4581—4640

	18h	−5°	
m	m s	′	
9.4	1 44.3	14.6	
7.5	51.9	40.3	K
9.5	59.4	35.6	
9.4	2 15.5	29.0	
9.4	3 33.5	38.8	
6.3	43.4	13.7	Sj
9.0	51.0	46.5	
9.4	4 6.8	5.3	
7.0	10.7	39.0	Sj
8.5	23.9	20.4	K
9.1	40.5	38.6	
9.0	44.6	52.7	
9.0	5 4.4	9.6	
9.8	11.3	14.5	
9.0	23.5	29.9	
9.5	36.4	47.2	
9.2	37.2	28.8	
9.5	6 1.3	19.4	
9.8	7.9	16.8	
9.5	11.5	22.3	
9.3	14.0	1.2	
7.8	45.0	36.4	Sj
9.4	46.1	6.3	
8.9	54.7	15.0	M
9.3	56.2	14.3	
9.4	7 21.1	56.8	
9.4	26.4	26.0	
7.0	50.3	30.7	K
9.2	8 0.4	51.0	
9.5	6.0	45.2	
9.5	11.8	9.5	
9.4	25.6	3.5	
9.3	33.9	52.8	
9.3	40.4	45.9	
9.4	53.5	7.3	
9.5	58.0	31.6	
9.8	9 17.8	4.8	
8.5	43.7	33.8	Sj
9.8	10 17.5	31.6	
9.0	22.4	56.5	
8.3	34.3	59.7	K
9.0	56.0	26.8	
9.1	11 3.4	20.5	
8.0	33.5	32.2	M
9.4	55.1	41.9	
7.5	12 4.4	0.9	Sj
9.8	15.6	36.6	
9.4	19.5	29.2	
9.5	21.4	59.1	
9.3	29.8	7.4	
9.1	54.0	33.4	
9.4	13 1.9	13.9	
9.7	19.5	58.0	
9.4	37.1	55.7	M
9.9	40.5	43.6	
9.0	14 0.7	48.3	
9.5	7.3	52.8	
10	20.6	41.2	
9.7	20.9	33.1	
9.8	21.4	54.6	

4641—4700

	18h	−5°	
m	m s	′	
9.0	14 24.3	20.6	
9.0	34.9	15.9	
8.8	41.4	8.5	K
9.0	56.7	46.3	
9.1	15 34.0	27.8	
8.1	38.9	13.0	Sj
8.8	39.4	58.5	M
8.6	40.2	39.1	
9.3	50.1	51.6	
9.0	16 33.9	56.3	
9.5	43.0	25.4	
8.3	49.1	4.2	Sj
8.5	17 17.4	21.2	
8.6	45.4	43.1	
9.4	18 27.5	38.6	
9.6	27.5	36.1	
8.0	52.2	40.7	Sj
9.7	19 20.1	51.4	
9.8	39.6	56.7	
9.3	44.8	40.1	
9.8	54.4	14.1	
9.4	58.9	18.6	
9.0	20 5.1	40.9	
9.6	13.5	28.2	
9.0	38.4	53.8	M
10	21 3.3	57.1	
8.8	27.3	7.7	M
9.8	28.2	14.1	
9.4	37.3	5.3	
9.4	44.7	42.7	
9.5	46.0	38.2	
9.8	47.6	55.7	
9.3	22 18.7	27.3	
9.4	21.4	0.2	
6.2	29.3	48.9	K
9.3	58.3	46.7	
8.3	23 11.6	6.0	K
7.3	24.0	53.1	Sj
9.2	30.9	26.5	
9.8	24 23.3	5.8	
9.8	30.2	39.0	
9.4	53.4	9.1	
9.1	58.0	28.4	
9.8	25 3.9	37.1	
9.0	17.9	22.8	M
7.0	23.6	15.2	Sj
9.1	26.0	23.9	
9.5	45.5	29.9	
9.8	46.3	8.7	
9.7	26 12.7	53.7	
9.5	22.3	6.9	
9.5	25.4	36.1	
9.7	42.2	58.6	
9.2	53.5	27.7	
9.8	27 3.6	1.0	
9.2	28 0.4	21.9	
9.1	14.5	31.0	
9.5	27.9	35.1	
9.5	40.5	13.8	
9.9	52.6	30.4	

4701—4760

	18h		−5°	
m	m	s	′	
9.7	28	56.2	59.6	
9.6	29	4.2	6.2	
9.1		8.6	19.0	M
9.2		8.7	5.3	
9.6		43.5	42.2	
9.4		50.4	30.7	
9.0		55.2	10.0	
9.8	30	15.0	37.3	
8.9		21.2	2.7	K
9.4		26.6	26.6	
9.2		53.2	57.6	
9.7		58.0	47.9	
9.4	31	14.6	50.1	
8.8		19.0	50.3	K
9.6		55.4	53.9	
9.6	32	18.7	52.3	
8.7		22.5	53.9	K
9.3		32.9	37.8	
8.2		47.0	50.2	K
9.2		48.0	53.7	
8.5	33	3.9	28.8	M
9.8		12.2	51.9	
9.8		12.7	49.0	
9.8		14.2	48.4	
9.9		34.0	45.8	
9.8		49.4	32.5	
9.5		53.9	32.5	
9.6		54.7	29.4	
9.9		55.0	59.1	
9.7		56.5	1.6	
9.6	34	10.6	3.9	
9.2		46.4	17.8	
9.7		52.2	50.9	
9.3	35	11.2	58.2	M
9.8		30.5	9.3	
7.8		39.2	50.0	M
9.2		41.0	55.1	
8.3		46.5	36.3	M
9.3	36	3.2	32.3	
9.8		13.6	39.0	
9.3		26.5	8.8	
9.1		33.2	1.2	
9.5		54.4	12.8	
8.2	37	1.1	19.6	K
8.3		21.5	38.6	K
9.3		26.0	58.4	
9.1		33.5	32.6	
9.6		56.0	44.4	
9.5	38	0.9	18.6	
9.4		15.4	44.5	
9.0		17.6	47.8	
9.5		40.7	0.5	
9.5		59.5	37.5	
9.5	39	1.2	3.4	
9.8		19.9	22.7	
9.2		21.9	48.5	
9.5		23.9	49.2	
9.6		35.5	11.7	
9.5		42.9	2.7	
var		45.2	51.1	B

4761—4820

	18h		−5°	
m	m	s	′	
9.5	39	53.7	2.4	
9.5	40	6.1	0.6	
9.8		11.6	54.0	
9.7		14.0	48.2	
9.7		15.0	52.6	
9.3		33.0	31.1	
9.3		38.4	14.4	
8.3		40.0	5.4	K
9.5		46.0	40.1	
9.8		46.1	35.5	
9.3	41	7.6	56.4	
9.8		39.5	39.8	
9.5	42	2.9	18.0	
9.1		10.0	27.1	
8.3		20.1	6.8	Sj
9.8		35.3	58.9	
8.7		48.0	32.9	M
8.4		52.1	7.2	K
9.5		52.3	56.0	
9.5	43	2.7	22.0	
9.3		16.2	53.7	
9.3		20.4	49.9	
9.3		35.9	8.2	
9.6		53.1	29.3	
9.8		54.0	34.3	
8.5		56.0	30.1	M
8.5	44	4.8	15.4	M
9.0		17.9	19.4	
9.5		27.4	52.1	
9.2		42.0	32.1	
9.3		46.0	5.2	
9.0		46.5	30.4	M
9.5		51.5	36.9	
8.7	45	35.6	25.0	M
9.7		38.5	40.1	
9.5		44.2	52.5	
9.6		49.8	40.9	
8.7		58.2	43.1	M
10	46	10.4	54.2	
8.8		16.1	49.3	M
9.5		36.9	13.7	
8.7		42.7	33.1	M
9.5		48.0	29.1	
9.1		48.5	55.2	M
9.4		52.0	27.5	
9.1		56.9	13.0	
8.0	47	38.4	19.2	Sj
9.9		59.0	48.3	
10	48	4.9	40.3	
9.6		8.8	42.1	
8.1		10.3	54.8	K
9.7		34.7	52.3	
9.0		40.6	15.3	
9.4		49.6	56.1	
9.2		57.4	21.7	
8.3	49	4.7	51.0	K
9.5		9.0	16.0	
8.9		28.5	4.6	M
9.4		28.8	42.5	
9.8		51.6	40.3	

4821—4880

	18h		−5°	
m	m	s	′	
9.7	49	55.6	27.5	
9.1	50	18.8	9.9	M
9.4		31.0	40.7	
9.8		35.7	38.1	
9.5		55.9	2.2	
7.3	51	2.9	49.8	Sj
9.4		4.3	22.5	
9.7		9.9	59.4	
9.1		13.7	45.9	M
8.4		44.4	38.6	K
9.1	52	10.2	35.2	M
10		29.5	52.9	
9.3		34.6	54.9	
9.8		41.2	47.5	
8.5		41.8	33.9	K
8.3	53	19.0	43.1	K
9.2		29.2	40.6	
9.4		35.1	43.5	
9.1		46.8	10.0	
4.7		56.3	56.4	Sj
8.1	54	41.0	44.8	L
9.3		48.5	4.8	
9.5		50.8	54.0	
9.0		57.2	0.0	K
8.1	55	7.7	44.4	L
8.9		7.9	55.1	
9.8		27.1	57.0	
7.0		33.5	45.8	K
9.7		36.8	33.2	
9.3		37.5	28.3	
9.5		37.7	22.8	
8.9		52.0	21.9	
9.5		53.3	37.6	
8.8	56	16.8	39.1	M
9.4		19.2	4.0	
9.4		23.8	38.5	
9.1		28.4	27.9	
7.0		39.6	53.5	K
9.7		44.1	57.4	
9.5	57	5.6	22.4	
9.3		8.8	26.9	
9.5		24.7	8.8	M
9.6		26.3	31.1	
9.5		32.2	33.3	
9.5		34.2	41.5	
9.4		38.4	27.1	
9.7		43.5	14.0	
9.5		46.8	44.5	
9.7		55.6	25.9	
9.5	58	2.2	35.7	
9.5		7.3	46.5	
8.8		10.4	18.3	K
9.5		12.0	45.6	
9.0		30.3	33.3	K
8.5		33.7	27.4	M
3		34.3	5.5	K
7.8	59	32.3	6.9	K
9.2		33.4	28.6	
9.1		42.0	8.8	
9.8		43.6	22.0	

4881—4940

	18h—19h		−5°	
m	m	s	′	
8.5	59	49.6	27.6	M
8.3		57.3	10.8	K
9.9	0	28.3	48.4	
7.8		31.4	33.1	Sj
9.5		54.0	30.8	
9.3		54.1	12.0	
9.3		55.7	25.3	M
8.5	1	28.7	21.6	M
9.3		30.9	3.8	M
8.9		31.2	55.1	
9.5		42.6	16.7	
9.0		53.3	8.5	M
9.2		57.2	25.0	
9.5	2	4.5	2.5	
9.3		26.4	44.6	
9.5		53.3	13.9	
9.4		57.1	56.8	
9.5	3	2.8	37.8	
9.7		29.9	30.5	
9.5		37.8	26.9	
9.8	4	37.9	9.4	
9.0		38.2	54.0	M
7.5		44.1	38.7	Sj
9.8		54.3	8.0	
9.0	5	4.5	5.4	
8.5		12.9	18.7	K
9.4		24.6	16.3	
9.1		39.4	37.9	
9.1		45.3	8.6	
9.5		49.8	54.1	
9.5	6	2.5	2.7	
9.1		16.7	5.4	M
9.5		17.2	54.9	
9.5		24.7	50.5	
7.8		36.2	56.0	K
9.5	7	35.8	17.4	
9.0	8	1.1	10.5	
9.0		6.4	34.1	K
9.1		8.2	43.8	
9.1		10.3	26.3	M
9.0		11.7	53.5	M
9.0		31.6	59.5	M
9.5		33.5	2.2	
9.3	9	16.9	37.4	
9.8		45.8	31.5	
9.7	10	23.2	40.4	
7.4		23.7	40.7	Sj
9.0		45.4	41.6	M
9.5	11	25.9	18.6	
9.3		28.8	29.5	
9.3		36.4	22.6	
9.8		37.3	20.5	
8.5		40.2	52.2	Sj
8.3		52.8	7.7	Sj
9.3	12	11.3	5.8	M
5.0		49.1	40.8	K
9.2		51.8	51.7	
8.3		57.1	49.9	K
9.0	13	12.5	41.8	K
8.9		17.9	33.7	K

4941—5000

	19h		−5°	
m	m	s	′	
8.7	13	39.4	52.0	Sj
8.2	14	4.8	5.1	K
9.0		11.8	22.0	K
9.1		19.9	37.6	M
7.5		22.3	0.1	Sj
9.4		23.6	0.1	K
9.7		42.7	2.2	
9.5	15	1.9	29.9	
9.5		19.3	0.6	
10		38.2	39.1	
9.4		38.8	27.3	
9.1		44.7	55.8	
9.5		58.4	46.8	
9.0		59.8	21.0	M
9.4	16	17.1	44.2	
7.4		21.1	46.7	K
8.8		26.3	35.2	
8.8		26.8	6.5	M
9.0		40.5	42.3	K
9.4		50.3	35.5	
7.6	17	1.8	41.7	K
9.8		16.3	19.4	
10		17.1	47.2	
6.8		19.4	10.0	Sj
9.6		26.9	13.0	
9.3		35.2	19.9	
9.6		43.5	45.6	
9.5		54.8	30.0	
9.8		54.9	48.5	
9.4	18	10.3	30.9	
9.1		26.4	13.2	M
9.5		32.9	34.7	
9.2		39.7	47.8	M
9.5		57.5	53.0	
9.5	19	46.8	31.6	
9.5		51.3	29.8	
9.4	20	3.6	58.0	
9.5		6.5	1.3	
6.8		10.7	6.2	Sj
9.3		20.4	6.1	K
8.7		25.3	45.6	K
9.3		42.1	48.7	
8.8	21	3.4	38.1	K
9.7		40.3	43.3	
8.5	22	17.4	13.3	K
9.4		50.9	32.4	
9.4		58.9	50.5	
9.5	23	0.3	12.4	
8.4		29.5	58.3	Sj
9.3		33.8	30.5	
9.3		46.8	7.7	
8.2		51.9	25.6	Sj
9.7		55.7	49.8	
9.4	24	5.1	21.6	
8.9		30.8	29.2	Sj
9.0		34.6	48.6	
9.1		46.4	13.0	
9.8		50.2	40.3	
9.0		51.9	10.6	R
9.8	25	2.7	38.3	

4780: neb GC 4435 4811: 9ᵐ60 54′52ˢ6 B_2, Ep. 1884.52 4858: sehr roth

5001—5060					5061—5120					5121—5180					5181—5240					5241—5300				
	19h		−5°			19h		−5°			19h—20h		−5°			20h		−5°			20h		−5°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.6	25	4.9	2.6		10	40	16.2	12.7		9.1	49	44.9	40.3		8.5	3	59.6	0.8	K	9.7	14	26.5	56.3	
9.6		8.6	9.2		9.5		30.6	46.3		10		49.4	55.9		9.5	4	25.0	20.6		9.0		55.4	43.9	
8.0		42.0	1.9	Sj	9.5		46.7	15.1		9.8	50	2.8	28.9		9.0		45.7	53.7	M	9.8		55.8	18.1	
9.3		51.4	34.7		9.7		46.8	7.0		8.5		15.0	34.2	M	9.7	5	6.5	4.4		9.4		57.7	24.6	
9.1		56.6	49.0		9.5		53.6	5.1		9.3		38.1	32.7		9.5		8.2	58.3		8.0	15	0.1	32.3	K
7.6	26	2.4	2.8	K	9.5	41	15.3	57.7		9.8		54.3	17.2		9.5		19.6	53.9		9.2		10.3	5.2	
9.3		35.7	2.4		9.5		23.0	14.1		9.6	51	16.6	50.3		10		23.8	54.6		9.5		11.9	55.9	Sj
9.3		48.3	27.2		9.3		39.3	52.0		9.3		29.2	50.3		9.6		27.1	58.5		9.5		16.9	38.6	
9.5	27	15.0	41.4		8.9		44.8	43.1	M	9.5		52.7	1.0		8.9		59.5	16.7	Sj	9.9		42.8	9.5	
9.2		32.6	40.9		9.1		45.3	52.0		9.8		57.5	57.3		8.5	6	25.5	16.7		9.5		45.3	13.2	
9.5		36.9	38.0		9.2	42	6.6	30.6		9.5	52	19.6	47.2		9.5		28.9	26.7		9.4		47.6	32.2	
9.4		42.9	39.0		10		26.2	57.4		9.4		22.6	49.4		9.8		44.0	0.1		9.3		53.8	13.7	
9.5		44.4	2.8		9.5		49.4	12.9		9.5		39.7	58.7		9.5	7	10.9	38.4		6.8		56.1	43.7	K
9.5		57.4	30.2		9.6		54.1	11.9		9.6		51.2	39.6		8.0		19.2	0.7	K	9.4	16	12.7	18.8	
9.4	28	6.6	41.0		6.5	43	8.2	3.2	K	9.2	53	25.6	49.2	Sj	9.6		24.3	46.6		9.4		13.1	32.1	M
8.8		10.0	53.0	Sj	9.1		8.8	2.3	K	9.4		42.4	14.3		7.0		41.1	58.2	L	9.5		22.0	39.4	
9.0		12.8	3.8	M	9.2		14.8	33.6		8.6	54	29.5	13.4	K	9.4		52.0	42.3		9.5		25.8	46.7	
9.0		14.4	49.2		9.0		23.3	1.3	K	6.3		29.7	23.4	L	9.5	8	10.5	23.4		9.8		26.6	30.5	
9.0		33.1	48.0	K	9.5		24.5	47.8		9.2		30.8	42.5		9.4		17.2	4.3		9.8		36.2	33.0	
8.3		39.5	7.1	Sj	9.0		24.6	46.0		8.8	55	1.9	54.6		9.4		44.0	20.9		9.7		43.6	50.6	
7.8		53.3	5.6	M	9.3		40.5	36.5		9.1		7.8	0.1		9.7		44.1	41.2		9.0		57.7	22.0	K
8.0		58.1	54.8	Sj	9.0		41.7	49.9		9.5		20.8	34.6		9.1	9	11.4	54.5	K	8.2	17	1.5	3.1	Sj
7.5	29	35.4	27.7	K	9.1		45.1	43.8		9.8		20.9	55.7		9.5		11.6	43.2		9.8		44.7	38.8	
9.2		36.1	55.5		10	44	0.4	18.9		8.2		34.0	1.9	K	9.3		13.9	9.1		9.2		46.6	36.3	Sj
9.5		56.0	8.2		9.8		12.3	32.7		9.6	56	0.9	23.1		9.3		26.2	14.2	Sj	10	18	6.4	43.1	
7.3	30	0.9	23.0	B	9.8		16.9	17.1		9.5		23.9	21.7		9.0		29.4	31.9		9.5		14.9	11.8	
9.0		4.4	24.8	M	9.5		30.9	15.5		9.8		34.4	21.7		9.7		58.0	26.7		9.5		17.8	58.1	
9.2		5.5	31.0		9.9		38.6	50.2		9.6	57	0.8	32.2		10		59.2	11.8		10		24.9	41.0	
8.8		12.1	54.0	M	9.3		39.6	23.8		9.0		5.8	1.8	R	9.6	10	5.2	2.3		9.1	19	7.7	26.4	
9.0		23.9	25.4		9.3		54.9	19.4		9.6		10.1	27.2		9.0		15.1	19.1	M	9.5		14.1	50.5	
8.9	31	18.4	44.8	M	8.0		56.5	55.0	K	9.5		13.3	28.4		9.1		15.8	7.4		9.3		27.3	18.3	
9.8		26.9	51.2		9.6	45	2.0	47.8		9.6		13.4	41.1		9.2		15.8	26.9		9.2		45.6	12.7	Sj
9.3	32	10.5	19.0		8.6		10.1	0.1	K	9.4		56.4	22.4		9.3		25.9	38.7		9.8		52.5	45.0	
9.3		11.6	52.4		9.6		22.9	12.7		9.3	58	7.4	41.5		9.5		27.5	42.0		9.9		54.4	55.3	
9.5		29.0	27.4		9.5		29.2	24.3		9.5		15.1	59.4		10		28.4	45.2		8.0	20	18.8	33.3	Sj
6.8		38.1	46.6	K	7.0		31.0	54.3	L	9.0		22.0	50.5	M	6.8		30.7	10.3	K	9.0		24.7	13.4	
9.5		38.4	15.2		9.4		47.0	4.1		9.5		44.2	52.6		9.4		45.0	18.5		9.1		32.1	58.3	M
9.5	33	11.5	30.2		10	46	11.9	49.4		9.8		45.1	37.9		9.1		49.6	19.5		8.7		35.4	21.4	K
9.2		20.7	42.0		8.0		34.1	25.2	Sj	9.8		48.3	32.7		9.8	11	0.3	46.1		9.5	21	1.7	36.6	
9.3		23.4	39.3	M	9.0		36.3	35.2	M	9.5		49.4	25.5		9.2		11.9	37.0		9.4		5.8	29.2	
9.5		34.3	15.3		9.5		39.5	8.6		10	59	0.8	26.1		9.2		20.0	57.3		9.8		7.1	17.1	
9.5		35.6	54.8		9.3		49.1	54.1		9.6		3.2	39.1		9.4		20.9	47.6		9.5		14.7	27.2	
9.2	34	51.1	58.5	M	9.6		59.2	40.3		9.5		10.3	49.6		9.9		28.3	15.1		9.6		16.2	7.1	
9.5		58.4	36.9		9.5	47	13.7	59.6		9.5		29.0	7.9		9.1		32.3	16.0	M	9.3		51.3	41.8	
9.3	35	5.5	38.9		9.7		27.9	48.1		9.6		30.9	39.0		9.3		51.3	4.8		9.7	22	8.7	38.6	
9.5		6.4	25.6		9.9		31.5	35.3		9.5		38.3	51.2		9.1		55.3	48.1		9.9		27.9	58.5	
9.0		34.0	34.8		10		33.0	52.4		10	0	0.3	32.0		9.9		57.4	12.5		9.4		34.7	41.4	
9.1	36	10.7	33.9		9.6		50.2	52.0		9.5		8.0	10.8		9.3	12	20.9	54.8	Sj	9.0		39.9	14.3	K
9.0		38.5	7.8	M	9.9		51.3	59.7		8.5		52.8	31.5	M	9.8		22.2	43.9		9.8		42.0	4.1	
9.5		46.9	25.7		9.9		54.1	31.6		9.7	1	0.3	48.4		9.7		53.9	1.8		9.7		48.5	48.4	
9.6		58.1	33.8		9.4	48	13.0	2.2		9.4		55.9	22.4		9.5		55.1	26.6		8.2		53.9	52.3	K
9.2	37	31.5	43.1		9.8		16.9	41.8		9.8	2	12.3	35.3		9.0	13	1.6	36.5	M	10	23	11.6	19.0	
9.2		56.8	46.1		9.8		23.5	30.0		9.5		22.0	16.1		8.7		2.9	59.2	K	9.3		23.5	21.5	
9.5	38	4.4	10.3		8.5		53.7	0.3	K	10		31.1	48.8		9.2		11.8	56.9	K	9.0		23.7	10.8	M
9.1		10.3	1.4		9.8	49	0.4	52.4		9.8		36.5	0.3		9.3		14.9	48.1		10		33.9	56.9	
9.0		39.8	41.6		9.4		8.9	28.6	Sj	9.8		42.8	2.2		9.8		27.4	4.0		9.5	24	1.7	44.2	
9.5	39	22.1	21.6		9.0		20.0	39.7		9.3		50.2	48.8		9.8		35.7	29.7		9.4		6.4	10.1	
9.5		49.4	59.8		9.4		22.1	53.5		9.5	3	2.2	7.8		9.9		55.0	9.2		9.9		18.1	44.9	
9.6	40	0.9	39.4		9.8		23.6	1.1		9.6		6.4	31.9		8.0	14	0.1	15.4	M	6.8		24.4	43.8	K
7.8		5.0	35.1	Sj	8.2		38.0	4.2	L	9.5		12.1	10.2		10		4.7	53.8		9.5		53.4	10.7	

5301—5360					5361—5420					5421—5480					5481—5540					5541—5600				
	20h		—5°			20h		—5°			20h—21h		—5°			21h		—5°			21h		—5°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.7	24	54.0	26.3		9.7	37	1.0	42.7		9.2	49	2.2	30.7	K	10	1	14.6	45.8		9.6	16	43.2	49.9	
8.0	25	13.5	39.9	K	9.4		14.4	33.5		9.5		45.0	27.4		9.4		22.5	39.9		9.4		54.1	37.2	K
9.2		16.8	48.8	M	9.5		16.3	10.0		9.8	50	6.6	55.1		8.5		40.1	32.2		9.7	17	45.0	53.4	M
9.7		53.2	39.3		8.7	38	0.0	10.0	Sj	9.8		11.9	29.5		9.4		57.3	3.1		9.2		51.0	23.4	Sj
8.8		56.3	50.7	K	9.6		27.5	2.4		9.8		12.5	43.1		9.3		59.3	40.9	K	10	18	10.0	56.2	
9.9	26	20.2	57.7		10		34.4	30.7		9.4		44.5	25.3		9.6	2	1.0	41.8		9.8		11.1	12.4	
9.8		20.9	8.0		9.5		51.0	47.9		9.4	51	25.6	10.4		9.9		26.4	56.1		9.4		41.0	59.5	
9.9		23.4	59.2		9.5		51.4	24.3		9.3		29.4	33.0		9.3	3	1.6	58.8		9.7		56.2	28.9	
9.2		27.4	13.0		9.4		57.7	13.3		9.8		37.3	24.0		9.0		37.2	22.6	K	9.2		58.0	42.2	
9.5		34.9	14.9		9.7		57.7	50.2	B	9.5	52	20.2	41.3		9.9	4	1.4	8.6		9.7	19	11.6	36.0	
8.8	27	28.7	5.5	K	9.1	39	9.4	27.3	Sj	9.2		20.4	9.7	K	9.0		9.6	39.3	K	9.3		21.1	51.4	
9.6		37.1	41.2		8.4		35.2	36.7	K	9.3		27.0	39.1		9.6		9.9	13.1		9.8		29.6	7.2	
10		43.2	40.9		9.4		35.3	16.1		6.0		55.9	17.1	K	9.5		19.7	21.1		9.5		48.5	32.5	
9.0		48.0	46.8		9.7		40.0	0.0		8.0	53	1.3	55.3	L	9.6		40.8	5.2		9.8		50.4	34.5	
7.8	28	0.9	13.0	K	9.5		54.9	25.6		9.4		6.5	38.5		8.3		42.4	9.1		9.0	20	32.1	14.7	Sj
9.5		21.8	27.2		9.2		58.2	38.6	K	9.5		7.5	57.1		9.7	5	6.6	16.9		9.8		59.1	53.4	
9.5		23.3	2.4		9.5	40	1.7	40.0		9.6		39.7	10.6		9.6		17.2	18.7		10	21	20.6	28.5	
9.5		28.0	6.0		4.2		5.4	33.4	K	9.5	54	2.1	21.4		9.2		42.7	48.7	Sj	10		31.0	30.5	
10		36.9	16.3		9.2		6.1	25.6		9.5		3.8	28.1		10	6	3.4	32.1		9.1		35.6	56.2	
9.5		39.7	35.1		9.5		35.1	58.2		8.0		14.2	13.8	K	9.9		7.5	16.7		9.2		51.6	35.9	
8.6		42.8	52.4	Sj	9.8		36.3	36.3		9.8		24.0	41.7		9.8		20.3	1.4		9.6	22	1.6	5.4	
9.5	29	11.6	0.2		7.5		37.2	9.9	K	9.6		37.6	9.6		9.6	7	46.9	42.4		9.6		2.9	19.2	
9.8		13.5	54.6		8.8		57.0	18.4	Sj	10		44.5	27.0		9.5		47.6	15.5		9.6		3.7	50.1	
9.3	30	1.0	13.2		9.4	41	12.1	59.4		9.7		57.8	53.3		9.4	8	12.4	31.9		8.0		39.1	8.3	Sj
9.2		4.3	27.0		9.0		38.1	7.7	M	9.6	55	41.0	30.3		10		15.9	58.6		10		53.5	45.3	
9.2		5.8	31.1		9.5		43.0	47.0		9.1		45.2	12.4		9.6	9	38.9	33.8		9.7	23	28.1	40.4	
9.3		15.4	23.6		9.5		45.2	23.1	Sj	8.0		45.5	56.5	Sj	8.0		48.0	58.2	K	9.1		43.6	17.2	
9.0		16.1	51.5		9.4		47.8	45.9		9.8	56	10.7	56.2		9.9	10	15.1	21.4		8.6		50.3	9.0	K
10		28.4	42.6		10		57.5	37.2		9.4		21.6	21.1		9.4		23.3	1.8		8.6		56.5	5.4	K
7.7		43.0	1.2	Sj	var	42	17.3	41.1	B	9.5		47.7	14.9		9.8		24.5	52.4		9.6	24	12.6	15.0	
9.5		51.2	38.0		10		35.2	56.5		9.1	57	1.7	3.6		9.5		28.8	43.4		9.4		19.1	13.0	
10	31	5.3	31.3		10		37.1	59.0		8.3		8.1	23.4	Sj	6.0		34.0	7.5	M	9.7		32.1	25.6	
9.6		6.0	33.8		8.3		41.4	39.1	B	9.7		11.0	4.1		9.7		41.1	40.8		9.6		32.6	59.1	
8.5		17.9	8.6	K	9.4		47.2	47.7	B	9.5		13.4	42.1		9.6		44.5	57.4	M	9.7		52.5	8.9	
6.5		25.3	26.5	K	9.5	43	0.0	46.2		9.8		21.3	58.1		9.5		48.0	37.5		10		57.6	51.0	
9.9		47.7	5.3		8.0		4.0	19.7	L	9.2		21.6	22.1		9.3	11	7.9	10.7		9.5		59.2	49.5	
8.5		54.9	21.8	K	9.7		29.7	46.0		9.1		28.0	44.9	M	10		20.5	41.5		9.7	25	1.8	23.7	
9.7	32	5.6	54.6		9.7		41.6	35.8		9.0		30.4	41.1	M	9.9	12	10.7	4.0		10		26.8	9.4	
9.4		18.9	49.3		9.2		46.7	44.0		9.8		36.9	13.9		9.5		20.9	29.2		9.0		35.1	9.4	Sj
9.8		41.0	38.3		9.4	44	3.4	29.6		9.9		43.8	22.1		9.0		26.3	42.8	Sj	9.8		45.2	41.6	
9.6	33	14.5	40.1		8.5		10.0	20.0	Sj	9.4	58	14.9	57.2		9.8		33.4	54.7		9.0	26	1.1	16.1	K
9.5		35.6	36.3		8.5		40.1	14.5	L	10		40.3	29.5		9.9		37.0	8.8		8.7		6.8	49.5	K
9.5		36.3	30.3	Sj	9.4		44.7	7.1		8.9		56.0	47.0	M	9.4	13	3.5	33.5		9.7		8.2	44.1	
9.0		39.0	42.9	M	9.4		50.2	10.9		9.2	59	0.7	40.7		6.2		27.5	10.3	K	7.3		31.9	0.3	L
9.3		42.5	3.2		9.9	45	22.2	37.0		9.4		5.3	6.0		10		30.0	49.4		9.3		43.1	35.8	
9.5	34	0.5	14.5		9.8		26.0	22.7		9.2		17.8	9.8		9.5		49.4	23.7		8.9	27	19.2	34.3	K
9.0		9.5	0.5	L	8.7		41.6	42.1	M	9.8		28.9	28.0		9.5		54.7	40.5		8.7		45.2	19.8	Sj
9.0		16.4	29.5		9.3	46	0.0	31.0		9.4		28.9	35.2		8.9		58.9	56.3	Sj	9.6		56.7	6.2	
7.8		49.9	48.6	K	9.0		13.1	8.4	K	9.8		31.5	11.4		8.0	14	3.0	5.9	K	9.1	28	13.2	53.9	M
9.5		56.1	12.8		6.7		26.6	5.2	Sj	9.7		55.7	41.8		9.7		9.4	34.4		9.3		20.8	5.7	
9.3	35	26.7	30.2		9.0	47	10.7	57.3		9.5		56.5	50.3		9.5		16.2	40.9		9.5		25.1	31.0	
10		32.8	15.4		9.6		37.5	49.7		8.7	0	5.2	12.7	M	9.0		20.7	1.1	K	7.7		56.1	41.8	Sj
9.7		39.0	32.7		9.8		52.7	4.0		8.2		6.2	1.8	Sj	8.9		28.7	3.2	Sj	8.5	29	20.2	26.0	Sj
9.0		39.2	40.9	K	9.4	48	8.3	19.8		8.7		22.7	4.9	K	9.5		36.4	4.8		9.4		25.2	59.5	
8.8	36	7.5	14.9	K	9.6		10.2	51.4		9.5		26.4	52.0		9.2	15	3.7	44.6	Sj	9.5		29.2	5.5	
9.5		19.6	58.2		9.7		32.9	43.1		9.4		35.1	18.0		9.0		43.1	35.8	M	9.6	30	5.7	7.3	
9.7		33.5	7.2		8.9		42.1	27.7	K	9.0		40.7	48.9	K	10		45.0	44.9		8.5		13.5	53.1	Sj
8.9		38.4	18.1	K	9.5		52.6	9.2		9.4		52.7	14.4		9.8		52.5	24.5		10		17.7	14.4	
9.0		46.4	21.6		10		54.9	13.7		9.4	1	0.4	1.8		10		58.0	56.4		9.8		53.5	4.4	
9.3		59.9	0.4		9.8		58.7	38.3		9.1		10.0	0.7	M	9.4	16	19.5	33.0		9.4		54.4	25.6	

5302: 12.16 39′38.″5 B_1, Ep. 1883.65 5433: 55.69 17′17.″2 B_4, Ep. 1871.61

5601—5660			5661—5720			5721—5780			5781—5840			5841—5900		
1h	—5°		21h—22h	—5°		22h	—5°		22h	—5°		22h	—5°	
m s	′		m m s	′		m m s	′		m m s	′		m m s	′	
1 6.4	19.6		9.5 46 38.3	11.0		8.6 2 53.0	55.3	K	9.5 16 35.1	30.0		9.5 34 19.4	16.0	
8.6	38.7	Sj	9.3 47 5.3	27.7		10 3 6.4	13.5		9.1 41.2	35.7		9.4 33.1	53.9	K
11.8	50.7		8.4 10.8	57.0	K	9.3 32.1	53.2		9.7 58.0	26.2		6.7 33.2	50.8	K
20.8	52.7		9.9 37.3	48.5		9.9 32.5	41.7		9.0 17 7.9	57.8	K	9.3 57.3	47.4	
25.4	34.4		9.5 52.4	4.0		9.4 4 12.0	40.2		9.5 29.5	11.3		9.7 35 20.3	44.6	
26.0	55.3		8.0 48 45.9	26.4	K	9.1 15.6	51.6	K	9.5 35.8	36.9		9.2 21.6	50.3	K
53.4	51.2		9.1 47.9	15.7		8.9 20.5	38.0	K	9.5 42.8	2.1		8.3 22.2	26.5	M
54.5	6.2	K	9.8 49 2.9	9.4		9.4 22.4	31.4		9.5 49.4	24.2		8.8 36 9.2	57.7	K
3 5.6	38.6		9.4 24.0	5.6		9.9 30.6	23.1		9.4 59.0	24.3		9.2 13.1	32.0	
9.7	18.5		9.0 49.9	58.3	K	9.4 55.3	51.6		8.0 18 33.1	54.6	K	10 21.7	43.8	
23.1	23.0	K	9.9 50 0.0	48.6		9.5 56.3	37.5		9.2 44.7	54.8	K	10 31.3	23.6	
30.9	48.3		8.5 24.4	53.2	K	6.7 5 10.5	26.0	Sj	9.3 52.6	22.8		9.4 37 5.0	7.0	
34.7	26.1	K	9.6 51 5.3	8.9		9.5 25.0	33.3		9.6 54.5	9.6		9.6 7.0	17.3	
37.7	36.4		6.9 21.0	3.3	Sj	9.3 36.8	3.5		9.2 19 22.8	17.5		9.8 19.4	2.1	
49.7	34.3	R	9.0 24.3	47.9	K	9.0 6 3.3	16.8		9.4 28.1	26.1		8.5 23.3	40.4	K
4 2.1	23.0		9.5 38.4	22.4		9.8 3.4	51.3		8.6 20 20.7	3.4	K	9.5 47.2	59.2	
14.8	27.0		8.7 55.6	18.0	L	9.6 9.6	56.3		9.5 44.9	27.3		9.7 51.8	25.7	
25.1	11.0		8.9 53 1.6	27.4	K	7.3 17.8	10.1	L	9.4 46.5	34.2		9.5 55.6	34.7	
44.1	0.2	K	9.2 6.4	30.0		8.6 20.5	21.7	M	9.4 52.6	1.9		10 38 31.5	41.4	
58.4	1.2	K	9.1 14.3	10.8	Sj	9.5 27.0	17.2		9.0 21 19.1	54.0	B	10 40.3	15.0	
5 15.2	44.6		9.1 25.6	11.8	K	9.6 48.6	17.1		9.0 42.8	13.7		9.9 39 37.2	30.6	
18.2	50.4		9.0 38.5	48.4	M	9.5 55.1	49.7		9.8 22 3.9	51 4		9.5 40 0.9	23.0	
52.0	44.8		9.3 38.9	58.8		9.8 7 31.5	37.9		10 25.0	42.4		9.0 3.5	4.4	K
53.4	2.8		9.3 43.7	2.7		9.3 8 24.0	38.3		9.1 26.9	50.2	M	9.5 15.1	23.8	
5 14.2	13.9		9.1 54 1.9	50.4		9.8 46.9	10.4		9.5 47.0	21.5		10 21.6	48.7	
35.7	55.5	M	9.0 3.1	33.3	M	9.5 9 20.4	17.5		7.8 54.6	33.3	B	8.2 59.0	20.4	L
36.4	1.4		9.8 13.9	12.5		9.0 42.9	12.9		9.5 56.3	3.2		10 41 2.4	25.9	
48.9	23.7	K	9.5 15.6	23.5		9.3 10 2.2	50.1		9.8 23 6.5	34.2		9.2 54.7	41.1	
49.2	48.5		9.5 55 9.8	7.7		9.4 10.7	58.9		9.7 29.8	16.1		10 42 4.3	9.4	
7 7.5	53.1	M	9.2 16.9	50.7	M	9.8 23.9	22.8		8.2 25 4.2	55.0	K	9.0 22.0	6.8	K
15.2	0.1		9.6 54.5	6.5		9.5 25.1	55.7		9.7 17.9	47.0		9.2 26.4	40.1	
8 0.3	5.9	Sj	8.7 56 20.0	42.1	M	9.1 43.2	48.7		9.2 43.6	43.0		9.7 28.4	26.8	
26.7	29.4		9.7 32.9	26.4		8.9 59.6	56.0	M	9.4 26 11.6	59.2		9.5 43 37.0	1.4	
45.9	46.8		9.5 39.4	29.0		9.6 11 4.7	57.0		8.5 15.8	12.2	K	9.4 37.5	16.4	
49.8	47.0		9.5 58.4	33.2		9.8 10.0	4.6		7.9 22.1	37.8	K	9.4 44 37.6	21.5	
9 1.9	53.0		9.5 58.9	21.8		9.8 38.7	40.2		9.6 27 21.1	8.6		9.9 39.0	16.0	
33.0	50.7		8.0 57 1.8	32.3	Sj	9.1 48.6	35.0		8.9 22.1	47.6	K	10 45 16.4	24.0	
38.8	54.3		9.8 14.0	39.4		9.4 50.0	43.3		9.2 45.7	32.8		9.5 37.3	8.4	
47.3	3.6		9.5 21.0	56.4		9.0 12 27.4	21.3		9.3 28 8.6	40.7		9.5 37.7	35.5	
49.6	16.4	K	9.6 30.4	8.4		9.4 36.0	53.2		8.7 45.7	53.8	K	7.3 46 13.2	25.5	M
9 13.8	26.5		9.1 43.7	4.9		9.8 37.6	48.8		10 29 0.2	25.8		8.9 40.0	12.4	K
53.3	14.6		10 44.7	34.8		8.9 53.9	12.5	K	9.3 19.3	45.5		10 46.6	38.4	
1 0.1	2.8		9.5 54.9	10.2		10 13 2.1	13.8		10 27.2	21.3		9.3 47 13.2	5.7	
23.1	16.5		9.8 58 0.4	30.3		9.5 12.6	25.5		9.4 37.8	48.6	M	9.7 13.8	51.7	
37.3	31.7		9.5 9.9	8.7		9.5 12.9	7.7		10 30 18.0	37.2		6.0 39.1	45.7	K
51.8	56.5		9.4 42.4	48.1		9.3 24.9	16.2		9.4 32.4	10.7		9.4 48 21.2	0.5	
2 12.8	21.2		9.1 44.4	5.4		9.3 31.2	11.3		9.5 44.6	39.0		9.2 32.9	54.9	
3 5.0	19.4	K	9.8 59 4.5	27.5		9.0 32.7	51.4	K	9.8 31 7.2	43.0		9.3 48.3	28.5	
9.7	47.8		9.2 5.1	48.1		9.8 34.4	20.4		9.9 8.4	58.0		9.3 50.7	26.7	
22.9	2.0		9.1 54.2	31.4		9.2 14 7.2	42.0		9.8 37.4	15.8		9.4 52.6	21.8	
42.8	38.0		9.0 58.0	59.9	M	9.3 28.0	10.0		9.8 43.1	28.2		10 49 11.5	21.4	
4 21.7	49.6		9.8 0 25.0	33.8		9.8 36.8	39.9		9.3 53.0	36.9		10 27.4	6.3	
5 16.8	13.8	M	8.9 52.5	10.3		8.9 54.7	9.7	M	9.8 56.9	5.7		9.5 28.2	15.1	
18.1	19.1		9.2 1 58.0	7.2		8.9 59.5	20.8		9.2 32 2.2	40.0	M	6.5 46.3	35.0	K
31.3	33.1		9.8 58.7	21.5		9.7 15 49.5	32.6		9.2 44.1	30.4	K	9.8 50 0.7	18.9	
31.4	39.3		9.5 2 0.8	3.2		9.3 51.9	50.0		9.8 44.2	58.2		9.2 39.6	49.0	
34.3	51.5		9.6 17.3	48.0		8.8 55.0	13.2	K	9.5 33 4.2	41.0		8.3 59.7	16.5	L
35.2	49.7		9.1 27.9	10.2		9.4 16 16.3	44.3		9.4 34 3.5	5.7		9.6 51 18.6	5.6	
6 22.3	30.2		9.5 35.9	8.6		9.4 29.0	23.6		10 8.3	18.6		9.7 25.3	4.6	
33.6	34.4		8.2 37.7	38.3	K	5.7 33.5	33.7	K	9.5 8.9	6.2		9.3 30.2	17.7	

5674: 21:09 3′21″8 B_1, Ep. 1883.64

5901—5940

	22h	23h	−5°	
m	m	s	′	
9.4	51	30.2	18.3	
9.8	52	3.7	37.6	
8.0		11.2	8.3	Sj
10		38.6	37.6	
8.5	53	7.1	19.7	K
10		24.4	14.0	
9.7		35.8	19.4	
10		36.6	7.5	
9.0		53.1	8.8	K
6.0	54	1.2	29.0	K
9.2		36.0	43.8	K
9.3		51.1	43.8	K
9.5	55	3.1	0.0	
10		42.3	50.9	
9.8		51.2	54.8	
9.7		56.4	3.7	
7.0	56	24.0	34.4	L
9.4		27.5	12.2	
10		32.4	53.0	
10	57	14.9	8.8	
8.7		16.7	56.5	K
9.7		54.6	43.9	
8.8		58.2	1.8	K
10	58	16.2	44.6	
10		36.1	14.3	
9.6		38.2	38.0	
10	59	44.1	19.2	
9.8		49.0	2.2	
9.5		57.6	49.1	
10	0	7.4	56.8	
8.9		16.7	52.7	R
8.8		24.6	33.3	K
9.8		29.4	35.7	
9.6		56.6	8.2	
8.9	1	9.7	33.7	K
10		24.4	52.3	
9.6		54.5	17.2	
9.5	3	5.8	56.9	
8.9		6.9	46.3	K
9.1		8.6	52.4	

5941—5980

	23h		−5°	
m	m	s	′	
9.5	3	17.3	58.9	
9.5		22.0	13.2	
9.4		34.8	48.7	
9.0		40.2	6.3	
8.5		47.3	53.2	Sj
9.3	4	22.1	36.2	K
9.3	5	0.6	47.6	
9.8		36.7	32.2	
9.5		38.7	3.3	
9.6	6	0.8	23.8	
9.5		11.3	35.6	
10		27.4	42.6	
9.5		46.6	0.3	
10		57.2	36.0	
10	7	2.4	40.3	
9.5		9.1	2.8	
8.2		51.2	19.2	K
9.6	9	12.9	55.2	
8.8		16.6	0.6	L
9.6		26.9	53.8	
7.8		45.7	13.6	Sj
9.4		52.8	48.7	
8.5	10	24.2	18.9	K
9.8		54.2	36.2	
8.7	11	21.4	53.7	L
6.2		53.2	54.8	Sj
9.7		58.9	45.0	
10	12	8.3	14.9	
9.9		32.9	51.4	
9.7	13	5.5	58.8	
9.8		9.0	46.5	
8.6		35.9	33.5	K
7.0		53.8	27.9	B
9.6		57.7	7.9	
9.5	14	28.8	45.0	
9.3	15	6.4	31.6	
9.2		15.7	8.8	K
8.9		21.0	49.7	Sj
9.7		26.9	25.7	
9.5		28.3	24.0	

5981—6020

	23h		−5°	
m	m	s	′	
10	16	21.4	26.0	
9.2		54.2	11.8	
9.0		58.0	59.5	K
9.4	17	9.4	31.7	
8.9		19.5	50.2	
9.2		45.8	21.8	
10	18	1.2	1.1	
10		19.3	12.5	
9.1		19.6	53.7	K
9.7		22.8	49.2	
10		33.2	40.1	
9.0	19	2.3	26.0	
9.0		10.5	47.7	K
9.8		42.0	17.8	
9.1	20	42.8	56.5	
9.0	21	10.2	4.8	
9.1		11.1	15.3	
10		35.3	4.5	
6.2	22	2.4	19.1	B
9.6		15.9	32.6	
9.0		44.9	38.1	
9.3		52.5	38.4	
8.0	23	29.1	51.2	K
9.3		49.9	51.2	Sj
8.9		56.8	3.0	K
9.4	24	12.9	12.8	
9.5		22.4	32.7	
10		38.1	56.5	
9.5	25	11.3	58.5	
9.5		25.3	13.1	
7.2		59.9	11.6	L
9.0	26	18.6	55.9	K
10		32.0	13.1	
9.6		41.5	26.6	
10	27	14.4	33.2	
9.5		39.7	59.2	
9.7		43.9	16.4	
10		45.4	35.4	
10		49.9	59.2	
9.7	29	21.4	0.6	

6021—6060

	23h		−5°	
m	m	s	′	
10	29	40.0	54.8	
8.7	30	9.2	54.5	R
10		31.0	58.0	
9.4		57.6	48.5	
9.5	31	7.2	14.7	
9.6		34.0	44.7	
9.5		46.9	3.8	
9.0	32	4.0	45.0	
8.8		16.1	28.1	
9.0		19.4	8.4	
9.8		22.4	8.0	
10		27.7	11.8	
8.7	33	50.1	13.5	K
9.3	34	7.6	43.8	
9.5	35	1.5	31.5	
10		24.7	36.4	
9.5		45.8	19.5	
9.7	36	20.3	55.0	
10		47.1	53.4	
9.8	37	1.7	28.3	
8.7		7.8	48.6	
9.5		10.6	10.9	
10		48.2	28.0	
9.0	38	6.7	35.5	
9.6		55.5	39.1	
9.5	39	53.6	16.5	
9.5	40	7.9	58.3	
7.3		12.1	15.6	L
9.2		13.9	7.8	
9.4		14.7	55.6	
9.3		15.5	21.9	
8.8		23.2	44.2	
9.7		43.3	0.0	
10		46.4	53.5	
8.9	41	1.6	29.0	K
7.7		17.5	14.3	K
9.9		46.4	55.9	
10		52.5	10.0	
10	42	10.6	47.9	
9.3		42.5	12.7	

6061—6100

	23h		−5°	
m	m	s	′	
10	43	6.6	9.2	
10		39.1	44.0	
9.9		40.6	7.8	
9.3		48.2	14.1	
9.4	44	2.5	55.9	
9.4		15.1	9.9	
10		24.7	44.5	
10		47.2	11.9	
9.8	45	0.1	1.6	
9.0		15.1	6.2	K
10		44.7	17.3	
9.1		56.9	51.5	K
10	46	7.2	17.7	
9.2		20.6	21.7	
8.8		36.8	4.9	
9.2		46.5	57.3	
9.2		47.9	45.4	WC
9.1	47	4.9	44.7	
9.1		8.3	31.8	K
9.5		24.7	19.1	
7.5		41.2	28.2	K
9.5		50.1	0.4	
8.0		56.8	42.3	K
9.6	48	30.9	3.3	
10		43.0	11.9	
10		57.0	3.4	
9.8	49	14.1	6.2	
8.5	50	12.6	44.9	K
9.6		38.5	0.2	
9.5		39.9	12.7	
9.8		55.0	14.4	
9.9	51	16.0	0.2	
9.2		26.0	5.4	R
10		46.4	28.3	
10	52	57.3	51.5	
10	53	30.4	25.6	
8.5		34.1	43.9	K
9.4		52.9	41.6	
10	54	8.3	49.5	
8.5	55	9.3	59.8	L

6101—6109

	23h		−5°	
m	m	s	′	
10	55	15.2	52.7	
10		59.4	57.0	
8.7	56	33.5	7.0	Sj
10		40.9	59.2	
9.0		45.2	44.1	K
9.5		54.1	13.0	
10		57.4	58.3	
9.3	57	37.5	46.8	
9.5		38.0	37.2	

6110—6117

	23h		−5°	
m	m	s	′	
10	57	42.1	14.0	
10		55.6	53.3	
9.5	58	31.1	35.9	
9.7		41.6	20.0	
10		45.5	58.8	
9.4	59	3.6	3.5	
9.3		7.4	56.0	
8.3		21.1	9.3	Sj

Zone —6°

1—40				41—80				81—120				121—160				161—200			
	0h	—6°			0h	—6°			0h	—6°			0h	—6°			0h	—6°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.9	0 22.4	17.7		10	10 52.5	11.1		9.3	22 2.0	28.6		9.8	36 1.4	53.5		9.8	47 38.7	52.4	
10	31.3	43.0		10	58.7	30.1		9.1	37.4	33.7		9.1	41.8	41.6		8.6	48.5	13.1	
8.8	50.4	9.1	K	9.7	11 19.3	36.0		8.5	37.9	54.0	K	9.2	59.3	13.5		9.8	51.1	45.2	
9.5	56.7	27.3		9.1	12 7.4	45.4		9.8	23 23.5	2.8		8.5	37 7.6	25.7	K	9.7	55.0	35.9	
9.1	1 21.2	53.8	K	9.6	26.1	5.5		9.5	50.1	35.9		9.1	17.4	13.9		8.6	48 40.0	15.0	Sj
9.5	26.4	1.4		8.7	26.8	15.6	Sj	9.1	24 30.0	4.0		9.5	20.5	56.0		9.5	49.5	9.6	
9.7	50.7	32.4		9.5	29.8	38.2		9.8	25 1.1	30.1		10	24.2	49.2		9.0	49 3.5	8.3	
9.8	2 19.5	22.5		9.3	37.3	38.8		10	26 1.2	47.8		10	31.6	39.4		9.5	20.2	56.1	
10	33.9	24.1		9.2	13 13.6	19.9		8.8	52.4	32.2	R	10	49.7	47.9		10	31.1	24.3	
9.6	46.3	1.3		9.3	17.0	40.0		10	27 19.3	37.8		10	38 29.8	43.5		8.6	57.5	53.4	K
6.8	53.2	3.4	Sj	9.7	53.5	10.1		9.8	59.7	8.5		9.0	43.9	26.5	WC	9.2	50 5.5	53.4	K
8.7	59.8	50.7	Sj	9.2	55.5	56.5		9.0	28 9.4	56.7	K	10	49.3	2.0		9.3	14.1	16.1	
9.5	3 14.2	49.1		9.9	14 12.8	8.3		9.1	22.2	52.0	K	9.8	58.2	59.2		10	26.3	11.3	
9.4	20.4	29.0	K	9.6	41.0	56.2		9.1	27.1	29.2	K	9.3	39 24.5	50.0		9.1	51 15.6	56.2	K
9.5	38.9	35.5		9.5	41.6	11.1		9.8	37.2	3.5		9.5	30.5	53.5		9.8	16.6	17.5	
9.5	4 47.7	40.7		9.9	47.9	39.8		6.5	38.0	21.8	K	9.5	54.8	0.8		6.8	24.8	39.7	Sj
10	50.0	55.2		9.5	51.2	46.1		9.3	41.1	33.9	K	9.4	40 15.4	10.9		9.8	36.0	11.6	
9.1	52.5	44.4		9.0	15 37.5	41.7	Sj	9.7	54.2	30.8		9.6	27.3	40.4		9.6	39.1	12.8	
8.0	5 47.9	2.9	Sj	9.2	16 11.0	32.8		9.6	55.2	12.0		8.0	31.5	47.1	Sj	9.3	52 6.7	26.3	
9.8	51.2	12.6		9.2	25.9	26.5	B	9.4	29 32.1	40.6		9.8	41 34.9	41.0		9.5	9.7	35.7	
9.2	54.8	47.3	K	10	37.6	25.3		8.5	34.1	54.1	Sj	8.7	53.7	57.8		9.9	39.7	20.3	
9.5	6 15.1	26.2		9.7	17 11.1	51.7		9.3	30 22.8	32.1		10	42 19.1	34.8		10	46.0	50.1	
10	22.9	0.7		10	28.5	6.9		8.5	34.3	47.7	K	9.5	20.0	24.4		10	53 19.1	47.4	
9.5	35.0	20.0		9.7	38.0	7.8		10	53.2	30.7		9.3	44.8	36.0		10	21.7	30.4	
9.8	37.7	14.9		9.6	18 16.6	44.6		9.8	58.8	18.2		8.9	52.6	59.2	Sj	9.8	34.9	36.3	
9.3	41.2	35.9		9.4	26.0	9.4	B	9.5	31 18.2	36.1		8.9	43 6.2	16.8		9.8	38.6	6.5	
9.8	49.5	23.1		9.1	32.7	52.5	R	9.4	18.7	34.2		9.8	6.4	43.3		9.8	57.7	57.5	
9.7	7 33.8	57.3		9.4	19 2.4	36.9		10	36.3	28.9		8.0	10.0	6.1	K	8.5	54 1.6	6.3	R
8.0	52.4	56.7	K	9.9	15.6	24.3		9.5	32 6.3	21.4		10	17.5	15.9		9.8	14.5	2.5	
7.6	8 26.5	24.3	K	10	16.8	16.4		9.0	24.7	3.7		9.9	44 6.0	21.2		8.7	22.0	45.2	Sj
10	59.0	35.4		8.5	28.7	19.9	Sj	9.5	43.4	52.8		7.8	23.1	53.8	K	9.6	24.1	14.7	
10	9 6.1	52.4		9.4	29.1	19.2		9.3	33 22.2	3.7		9.1	25.0	22.0	K	9.1	55 24.3	36.7	
9.4	26.6	22.1		9.0	41.2	51.8		10	56.9	17.4		8.3	50.5	47.7	Sj	10	33.7	5.3	
9.3	40.5	11.5		10	20 32.3	44.1		10	34 16.4	36.8		10	45 40.3	48.7		10	42.1	33.0	
9.8	49.7	25.4		10	36.1	6.8		8.9	26.8	49.3		10	42.7	38.4		9.6	56 3.6	4.0	
9.5	10 22.8	44.2		9.5	21 40.4	49.4		9.0	51.9	25.7	WC	8.6	45.0	24.6	Sj	9.3	7.2	35.1	
8.4	23.9	57.1	K	9.4	41.0	54.3		9.2	58.3	30.2		9.1	55.4	26.8		8.5	8.0	22.1	
9.3	24.7	59.6	WC	9.8	42.1	9.8		9.5	35 4.0	55.4		9.3	46 4.1	32.5	K	10	20.1	50.5	
9.5	39.0	46.8		7.8	54.0	42.2	Sj	9.2	4.8	30.7		9.0	29.0	45.4	K	9.4	32.4	18.7	
9.5	42.8	46.8		8.3	55.3	26.3	Sj	9.9	11.3	24.8		9.6	50.9	37.0		8.3	57 3.1	4.6	K

201—260					261—320					321—380					381—440					441—500				
	0h—1h		—6°			1h		—6°			1h		—6°	′		1h—2h		—6°			2h		—6°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
7.8	57	16.7	5.9	K	10	15	24.3	30.8		9.9	34	51.3	20.9		9.5	53	11.4	44.3		9.9	9	34.3	52.5	
8.5		26.6	14.7	Sj	9.4		34.4	41.0		9.5	35	8.5	57.9		10		47.3	57.7		9.3		36.1	47.4	
9.8		43.5	52.9		10		39.6	40.7		9.8		22.7	12.0		9.5	54	3.8	13.0		9.9		51.9	49.8	
8.8	58	24.9	38.0		7.4	16	32.8	34.3	K	9.8		28.2	11.0		9.7		30.5	31.2		9.0	10	5.7	43.1	
9.3	59	4.9	36.0		9.5		47.0	13.7		9.3		43.9	27.2		9.3		40.6	46.3		9.8		13.3	15.3	
9.2		35.7	7.5		9.5		47.7	4.6		9.5		51.7	15.0		9.0		43.2	49.0	K	9.8		44.9	51.4	
9.0		40.2	6.4		9.4	17	4.1	39.1		8.5	36	34.8	15.0	K	9.7	55	1.2	32.8		8.8	11	10.3	41.6	
9.1	0	26.0	11.5		9.0		26.8	44.3	K	9.4	37	2.8	29.4		9.8		15.1	46.2		9.8		10.6	24.6	
10		46.2	52.2		8.8		36.6	38.0		9.5		3.6	25.2		9.4		34.1	55.6		9.8		33.5	11.4	
9.4		56.1	59.9		7.0		42.2	42.1	K	9.1		43.0	30.4		9.3		42.0	37.6		9.4		34.7	29.1	
9.8		56.2	14.5		9.8	18	35.0	16.0		9.9		54.0	53.5		10		59.2	51.0		9.3	12	13.2	53.0	K
7.5	1	7.5	56.8	K	9.7	19	7.7	4.8		9.4		56.0	29.4		9.3	56	0.4	0.4		9.5		13.7	22.7	
9.6		18.8	18.5		9.6	20	2.5	16.8		9.7	38	15.8	8.8		9.8		29.0	7.3		7.5		42.0	59.1	K
9.1		20.5	44.0		10		34.4	59.4		9.1		33.4	0.6		9.4		30.4	29.3		9.1		46.4	58.9	K
9.1		25.6	44.9		8.2		58.8	49.5	K	9.5		42.1	56.6		10		36.3	59.2		9.0	13	9.9	58.8	K
9.8	2	26.9	39.8		10	21	18.1	17.2		5.8		43.0	27.7	K	9.7		45.9	33.0		9.0		18.3	51.2	K
9.0		31.3	13.6		9.4		27.6	39.4		9.5		49.8	39.6		7.5		59.7	24.4	K	9.2		31.8	10.1	
9.8		51.6	45.0		7.8		43.1	27.1	K	9.2	39	0.3	30.2		9.4	57	41.0	5.2		10		53.9	49.0	
10		59.0	10.6		9.3	22	24.1	39.0		9.0		57.6	58.8	K	9.0	58	11.1	43.6	K	9.3	14	39.0	22.2	
6.8	3	10.7	51.2	K	7.0		35.2	20.7	K	9.0	41	7.3	4.8		9.5		16.2	49.0		9.9		51.7	42.3	
9.5		12.9	33.5		9.3		40.1	29.6		10		12.1	26.4		9.0		19.0	41.8	K	9.9		59.4	54.4	
9.8		20.9	30.9		9.5	23	28.0	13.1		10		42.1	40.1		9.5		37.5	4.6		9.6	15	5.3	35.6	
10		24.1	45.7		10		29.0	43.6		9.7	42	10.4	43.2		10		42.6	47.9		9.0		14.9	49.5	
10		37.0	38.9		8.5		50.1	17.5	K	10		16.0	52.2		9.2		53.5	22.6		9.5		25.1	12.9	
9.5		48.9	33.7		10		55.8	24.4		8.5		44.6	53.8	K	9.8		53.5	4.8		9.5		25.4	20.1	
8.5	4	14.8	6.9	K	9.8	24	8.2	37.9		9.7	43	4.7	2.3		9.8	59	22.2	17.5		9.3		26.0	24.0	
9.5		17.7	47.6		10		22.1	22.9		9.4		10.5	51.1		8.2		26.9	27.9	K	9.1	16	2.5	52.9	K
9.4		25.3	56.1		9.8		38.8	48.7		9.0		11.1	30.4	K	9.5	0	7.1	37.1		9.3		2.6	8.7	
9.5		34.3	33.8		8.4		44.6	38.4	K	9.3		11.4	34.5		9.5		21.6	44.2		9.3		7.5	54.9	K
9.5	5	30.7	52.5		9.2	25	21.2	36.1		9.8		40.4	18.7		9.3		44.2	43.7		7.0		8.9	50.6	Sj
9.5		55.9	10.4		8.9		53.3	43.2	Sj	8.8		47.3	11.5	K	9.1		45.6	5.8	K	9.7	17	1.7	45.7	
9.0	6	7.0	43.9		9.8	26	40.2	5.2		9.8	44	10.2	56.7		8.8	1	3.2	26.1	K	9.8		21.0	25.3	
10		8.2	48.1		9.0	27	2.9	51.7	K	10		49.7	2.4		9.4		38.3	28.0		8.9		25.1	33.1	K
9.4		10.6	57.9		9.4		6.0	58.1		9.8	45	4.8	27.0		10		52.2	23.8		9.5	18	3.9	15.5	
9.4		27.4	9.5		9.9		15.5	48.7		9.6		11.1	28.9		9.1		57.9	25.7		9.3		8.3	25.3	
9.5	7	10.3	12.6		10		50.1	29.7		9.6		20.1	33.5		9.6	2	12.5	2.5		9.8		17.0	24.5	
9.5		13.2	56.1		9.8	28	16.9	52.0		9.2		26.9	38.9		9.8	3	16.0	31.4		9.8		51.5	30.1	
10		53.4	18.0		9.5		20.3	45.4		9.9	46	31.4	58.5		9.8		39.1	4.9		9.1	19	6.8	4.5	
9.5		55.4	15.7		9.6		27.9	32.5		9.8		32.5	22.4		10		58.4	48.5		9.5		11.9	20.0	
9.6	8	57.9	35.2		10	29	12.0	12.5		7.5	47	21.2	59.0	K	8.3	4	4.7	19.4	Sj	9.2		35.2	44.3	K
9.0	9	33.3	33.9		9.2		23.5	31.8		9.1		31.6	22.4		7.8		27.3	49.0	K	8.2		51.7	44.8	Sj
9.3		34.0	0.0		9.3		41.9	56.9		9.5		43.0	18.7		9.3		53.4	31.2		9.8	20	40.3	51.9	
9.1		45.0	43.7		9.1		51.5	27.1		9.6	48	3.6	49.5		9.0	5	3.0	4.0	K	9.8	21	12.8	2.7	
7.8	10	1.9	23.6	K	9.5	30	1.9	25.6		9.9		32.4	9.3		9.5		15.3	49.7		9.0		33.5	18.7	
9.4		20.5	20.0		9.5		6.6	27.5		9.6		36.1	6.2		9.4		34.5	42.8		9.5		39.7	0.3	
9.0		23.3	39.4	K	9.1		43.3	24.4	K	9.8		55.5	13.1		10		35.8	52.7		8.1		49.8	6.0	K
9.7		28.3	2.1		7.3	31	28.2	28.2	K	9.4		58.4	38.7		9.0	6	0.2	40.8	K	9.8	22	12.6	56.4	
9.4		36.4	6.2		9.5		40.3	4.0		9.5	49	18.6	23.7		9.9		4.4	59.6		10		15.5	25.8	
9.8		57.0	20.9		9.5		56.4	55.7		9.8	50	19.1	24.1		10		11.1	27.8		9.7		48.8	35.6	
9.0	11	39.8	37.8		9.5	32	15.0	56.4		9.8		30.0	44.4		9.3		39.0	29.5		8.5	23	8.9	58.6	K
8.0	12	17.4	5.2	K	9.8	33	2.0	57.4		9.4		37.7	24.3		9.1	7	4.2	5.9		9.5		17.5	30.2	
9.4	13	10.0	25.7		9.8		6.3	41.5		9.5		43.1	51.0		9.0		21.1	37.4		9.1		38.1	30.6	K
9.1		22.2	59.6		9.8		23.8	26.0		8.8		52.6	44.6	B	9.7		31.7	42.7		9.5		52.1	58.6	
9.1		27.5	15.1		9.0		30.5	43.3		9.3		57.4	40.7	B	8.5		37.3	47.0	K	9.5		58.2	1.2	
9.3		45.8	53.8		8.5		35.5	54.0	K	10	51	13.0	39.7		10		50.6	5.5		9.9	24	34.8	42.0	
6.5		59.3	55.0	K	8.4		42.1	8.5	K	8.9	52	5.1	49.3		8.9	8	22.6	8.0		9.3		43.4	47.4	
9.4	14	7.9	3.0		9.9		43.2	33.5		9.3		32.8	2.9		10		32.8	51.5		9.0		56.8	31.2	K
9.6		36.4	6.7		9.0		59.8	46.4	K	9.0		39.4	7.6	K	9.9		40.4	46.5		9.4		56.9	24.4	
9.4		47.8	3.5		10	34	5.2	51.1		9.5		43.1	23.1		9.9	9	7.6	31.8		9.3	25	29.7	6.2	
9.5	15	2.3	46.8		10		31.5	56.9		9.3		52.9	6.4		9.1		28.8	20.7		9.5		46.6	35.4	

501—560

	2h		−6°	
m	m	s	′	
8.2	26	40.3	38.6	Sj
7.0		54.0	16.4	K
9.0	27	11.5	56.6	K
9.4	28	5.1	53.4	
9.4		7.4	47.3	
8.5		20.0	18.5	B
9.6		59.5	12.5	
9.8	29	35.5	45.1	
9.1		52.4	38.2	
9.5	30	36.2	21.0	
8.6	31	6.8	36.0	K
9.8	32	26.4	42.5	
8.9		54.6	18.7	K
9.5	33	19.6	59.1	
9.8		37.9	30.9	
9.5	34	25.4	53.9	
9.5		27.3	24.4	
9.4		30.5	32.4	
9.5		43.6	13.0	
9.1	35	0.9	43.7	K
9.6		8.0	31.3	
9.4		30.4	39.6	
9.0	36	12.4	4.8	
7.0		49.2	37.5	B
8.3		49.3	57.8	L
9.8		55.2	41.8	
9.5		59.3	40.0	
9.1		59.8	13.0	
9.5	37	18.9	2.8	
9.9		23.0	13.9	
9.7		38.3	31.2	
9.8		39.0	21.2	
10		40.5	41.8	
9.5		45.1	45.2	
9.5		47.9	3.8	
9.8	38	3.0	37.7	
9.0		3.4	6.2	
9.0		9.0	20.3	
9.0		20.8	57.5	
8.0	39	34.8	26.3	K
9.4		43.7	31.5	K
8.5	40	1.8	22.7	B
9.4		18.5	37.6	
9.6		25.1	47.3	
9.5		36.4	26.7	
9.5		39.0	5.8	
9.4		59.8	55.9	
9.0	41	12.7	50.5	K
8.4		16.6	47.3	K
7.2		17.5	20.5	L
9.6		30.3	21.3	
9.5		38.4	30.5	
9.4		49.1	12.6	
9.2	42	8.7	28.2	R
9.4		14.7	29.8	
9.9		20.0	10.8	
10		28.7	9.5	
9.9		56.0	52.5	
9.0	43	3.3	53.6	
9.2		8.0	31.4	

561—620

	2h—3h		−6°	
m	m	s	′	
9.0	44	19.2	20.6	K
9.8		27.8	16.0	
8.5	45	20.1	39.1	
9.2		22.5	29.4	
10		39.4	22.4	
8.5		46.3	12.5	K
9.3	46	3.0	12.9	
9.7		3.3	10.5	
9.2		5.9	0.5	
9.4		29.2	0.3	
9.8		31.3	26.6	
9.1	47	9.4	54.0	K
9.5		33.4	20.8	
8.6	49	25.8	50.4	K
9.0		30.8	15.4	
8.9	50	13.9	54.9	B
9.5	51	5.3	13.8	
9.5	52	1.5	26.7	
8.6		5.9	49.6	K
9.4		18.7	34.8	
9.5		42.3	13.8	
9.4		49.0	43.1	
8.9		58.2	10.0	K
9.0	53	0.2	39.4	
9.1		48.3	44.6	
9.9	54	43.1	53.0	
9.1		56.0	38.0	
8.8	55	7.0	22.8	Sj
9.1		24.6	1.2	
9.7		45.6	28.4	
9.1		48.5	56.6	
9.3	56	21.3	4.4	
9.3		22.9	12.4	
8.0		25.2	13.4	K
8.5		37.9	16.0	K
9.1	57	8.8	18.0	
9.0		38.2	30.3	
10		54.2	0.7	
9.8		59.0	59.0	
9.5	58	1.0	33.4	
9.5		8.1	24.2	
9.0		8.7	55.6	
8.5		26.3	4.4	Sj
9.4		30.3	31.0	
9.5	59	9.3	25.5	
5.3		23.7	39.0	K
9.0		51.6	48.0	K
9.7		56.6	32.7	
9.3	0	1.9	29.1	
8.5		38.5	19.4	Sj
8.9		48.1	18.0	K
9.8	1	19.5	18.8	
9.7		22.0	33.0	
8.5	2	4.3	4.8	K
9.3		48.7	17.7	
9.0		53.3	29.4	
8.6	3	5.2	36.6	
9.5		9.6	18.2	
9.7	4	2.0	18.7	
9.5		8.1	21.4	

621—680

	3h		−6°	
m	m	s	′	
8.5	4	26.4	15.3	Sj
9.0		52.3	15.4	K
9.5	5	21.2	2.5	
9.4		42.8	31.9	
9.0	6	10.6	16.5	
9.2		21.5	12.2	
9.0		23.9	52.0	K
9.5		29.7	20.5	
10	7	43.6	28.6	
8.4		55.9	0.2	K
8.9	8	17.1	46.8	Sj
10		17.3	28.4	
9.3		23.2	31.8	
9.4		35.7	56.8	
9.4		50.0	14.9	
6.0		51.0	27.2	Sj
9.4		53.2	23.5	
6.3	9	11.4	16.2	K
9.8		39.9	55.8	
9.8	10	34.8	8.1	
9.5		40.0	20.3	
9.4		40.6	12.6	
8.8		42.9	27.3	
8.9	11	4.3	56.9	Sj
10		5.1	48.5	
9.3		8.5	30.5	
9.3		12.0	42.2	
9.3	12	10.1	47.8	K
9.8		14.0	34.4	
9.5		15.6	22.0	
9.4		25.2	47.6	K
9.1		26.4	30.2	K
9.4		38.4	15.4	
9.5	13	4.2	29.4	
9.8		29.7	1.8	
9.8		41.1	43.3	
9.9		41.9	34.4	
9.1	14	2.0	43.1	
10		8.9	8.7	
9.5		19.8	8.3	
9.3		45.0	40.6	
9.1		57.9	12.6	
8.4	15	5.0	16.0	
9.4		13.9	23.8	
9.2		15.4	7.9	
9.2		26.0	55.5	
9.4		54.8	54.8	
9.8	16	3.5	15.8	
9.1		27.9	31.6	
9.0		42.3	6.9	Sj
9.4		44.3	29.1	K
9.2	17	19.1	39.8	
9.8		39.6	39.8	
9.3	18	21.4	35.0	
9.4		37.5	18.3	
9.5	19	47.5	11.8	
9.3	20	35.6	38.6	
9.4		45.3	31.5	
9.5	21	0.0	16.1	
9.6		30.7	22.1	

681—740

	3h		−6°	
m	m	s	′	
9.0	21	54.4	10.0	K
9.0	22	9.6	36.4	
9.0		14.4	3.5	K
9.5		22.7	33.0	
9.0		51.8	46.7	
9.3	23	25.4	53.9	Sj
9.3		26.7	55.4	
9.5		35.8	36.6	
8.5		39.7	43.1	K
8.1		51.4	7.8	Sj
9.4	24	8.2	20.0	
9.7		11.1	10.8	
9.3		15.4	37.0	
8.6		35.1	33.5	Sj
8.5	25	8.5	29.2	K
9.5		12.0	7.7	
9.8		38.8	31.8	
10		45.1	34.3	
9.8	26	18.2	19.6	
9.2		18.3	41.5	
9.2		46.9	0.5	
9.1	27	36.0	53.1	K
9.1	28	55.3	25.3	
8.8	29	5.4	4.5	K
9.5		38.0	11.1	
9.5		55.8	29.6	
9.2	30	10.3	43.1	
9.5		14.2	23.5	
9.9		28.0	10.0	
9.6		55.6	37.0	
9.0	31	18.8	30.0	
8.6		20.3	23.3	K
5.8		51.6	5.9	K
9.0	32	0.7	58.4	
9.1		5.9	36.7	
9.0		45.1	9.2	
9.5		59.0	14.4	
9.3	33	11.2	31.3	
9.5		30.3	6.8	
9.6		33.1	50.9	
9.4		39.7	58.5	
8.8		42.8	40.6	
9.5		59.6	58.5	
9.1	34	5.2	18.4	K
9.0		8.1	9.0	K
8.7		21.6	32.3	K
9.4		43.4	24.8	
8.7		51.0	53.1	Sj
9.5	35	15.1	12.8	
9.5		21.5	1.6	
9.8		54.5	29.5	
9.7		59.8	10.1	
9.8	36	0.4	7.6	
9.0		32.7	18.4	K
10		40.9	57.3	
9.0		55.0	31.0	K
9.4		59.7	16.9	
9.0	37	3.6	21.9	K
9.4		4.4	18.1	
9.5		6.0	47.0	

741—800

	3h		−6°	
m	m	s	′	
9.9	37	45.6	8.6	
9.5	38	13.5	32.9	
9.0		31.5	46.6	Sj
9.7		46.4	30.4	
9.0		47.5	56.4	K
9.0		49.4	24.8	K
9.5	39	26.4	39.9	
10		42.8	38.0	
9.3		50.2	16.7	
9.7	40	8.3	56.8	
9.1		34.2	43.0	
9.9		53.0	40.0	
9.1	41	17.7	54.3	
8.5		26.1	46.9	Sj
9.5		35.5	19.0	
9.0	42	9.0	42.7	
9.4		14.9	26.6	
9.2	43	29.7	33.6	
8.8		54.6	30.3	Sj
9.4	44	1.9	19.5	
9.4		10.4	47.1	
9.4		24.6	49.4	
9.2		48.3	11.0	
8.9	45	1.0	40.5	K
9.5		32.8	41.2	
9.0		41.9	22.8	
9.8		47.4	34.9	
9.5		47.8	58.9	
9.2		48.5	23.0	
9.6		59.5	24.8	
9.6	46	3.0	25.5	
9.1		17.5	16.3	
10		18.9	31.8	
9.7		20.4	5.8	
10		30.1	23.2	
9.5		31.9	32.5	
9.8		44.3	22.1	
8.3	47	1.3	57.2	Sj
8.2		20.5	17.0	K
10		31.1	0.2	
10		39.7	1.8	
9.1		47.4	17.8	K
9.4	48	7.2	1.7	
9.3		37.3	50.5	
9.1		46.4	36.2	
9.5	49	13.3	35.2	
9.0		26.2	48.7	
9.3		33.1	2.2	
8.7		37.2	2.8	Sj
9.8		56.4	53.8	
9.8	50	19.6	2.8	
9.3		30.4	26.3	
9.0		37.0	50.4	K
9.9		41.3	47.7	
8.7		56.2	10.5	K
9.5	51	44.9	15.0	
9.5		58.3	17.6	
9.8	52	32.0	39.1	
8.4	53	11.8	47.8	K
9.4		40.9	12.7	

638: rothgelb

801—860				861—920				921—980				981—1040				1041—1100			
	3h—4h	—6°			4h	—6°			4h	—6°			4h	—6°			4h—5h	—6°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.3	53 44.7	3.0		9.1	9 32.4	8.3		9.7	23 7.6	50.4		9.7	37 41.7	17.5		10	51 51.1	42.3	
8.8	54 5.1	39.1	Sj	6.8	10 14.1	49.5	Sj	9.5	37.7	53.8		9.0	46.4	0.3		10	52 0.2	10.9	
9.5	21.4	17.8		9.5	17.7	2.5		9.5	24 6.6	27.1		8.6	54.7	19.5	K	9.9	4.7	11.1	
9.5	30.9	50.5		9.2	11 0.8	39.9		10	11.7	22.7		9.6	38 10.8	55.7		9.0	17.5	0.0	K
8.0	55 6.6	23.4	Sj	9.6	3.8	29.3		9.8	39.8	44.9		9.6	47.6	53.3		9.4	22.6	3.5	
9.0	7.4	17.7		9.8	30.2	47.3		9.8	44.2	59.2		8.8	50.3	44.1		9.4	28.2	35.7	
9.9	56 13.1	19.9		9.1	32.1	35.7		10	47.0	53.6		9.8	39 8.1	50.2		9.5	45.1	42.5	
9.0	31.0	20.0	K	9.7	12 7.6	28.5		9.8	57.3	9.6		10	9.7	16.0		10	48.0	36.3	
8.0	51.8	27.2	K	9.8	7.9	20.8		9.0	25 45.2	2.1	K	9.4	31.7	29.2		9.5	57.8	5.1	
9.8	57 19.0	14.7		8.7	9.1	52.4	Sj	9.1	48.3	43.0		10	53.6	18.1		9.8	53 4.3	17.0	
8.4	22.9	34.2	B	9.9	26.6	55.2		8.8	48.7	37.9	K	9.5	40 4.6	10.9		8.0	7.4	31.1	K
9.1	31.9	34.3	B	9.0	49.0	30.3		9.5	55.5	46.6		9.0	41 1.4	40.3	K	8.2	14.3	24.5	K
9.2	55.6	24.2		9.1	13 10.3	30.7		9.8	26 35.7	21.8		9.1	42.6	25.6		9.5	17.4	52.8	
8.5	58 9.3	48.6	L	9.4	17.5	33.0		9.0	46.3	33.0		8.7	44.9	6.1	K	9.8	23.1	0.7	
8.5	17.2	44.2	L	6.8	32.2	35.2	Sj	9.0	47.2	49.3		9.3	42 3.0	30.2		9.2	27.7	12.3	
9.1	29.0	18.6	R	10	39.5	52.4		9.0	48.3	39.9		9.8	14.4	6.2		9.5	36.8	6.1	
9.5	37.3	39.7		9.8	44.8	20.8		8.7	56.2	31.3		9.3	34.7	18.2		9.3	37.9	17.9	
9.5	59 19.1	8.0		7.3	14 23.9	25.0	K	10	27 22.7	56.0		10	37.8	36.5		8.8	52.2	8.0	K
9.9	23.7	41.4		7.2	32.3	37.8	L	9.4	29.7	51.4		8.5	38.0	53.7		9.5	54 1.0	56.7	
9.5	48.0	18.1		9.0	33.8	22.1		9.4	33.6	46.6		7.8	38.6	40.1	K	9.5	17.6	39.6	
9.6	0 20.8	35.1		9.0	39.4	16.4	K	9.9	44.6	16.6		9.2	43 4.8	51.8		9.3	27.0	0.0	
7.0	21.6	23.6	K	9.3	39.5	5.1		9.4	55.7	55.3		9.7	14.9	56.5		9.8	35.7	46.5	
9.0	23.1	51.5		8.9	44.1	51.2	Sj	8.9	28 27.2	23.5	K	9.4	56.8	17.6		8.8	39.9	50.8	
9.3	59.7	3.8		9.5	55.0	46.7		9.2	42.6	19.6		9.8	58.7	51.6		8.6	55.5	39.2	
9.5	1 24.8	1.0		8.9	58.7	12.4	K	9.1	50.8	50.3		9.5	44 9.8	19.8		9.8	55 14.0	48.9	
9.5	36.8	0.5		9.3	15 2.8	37.5		9.5	29 8.6	14.9		9.1	11.5	4.6		9.5	22.8	37.7	
10	37.4	56.3		9.9	4.3	56.8		9.5	30 16.9	4.5		9.5	33.4	39.5		9.8	26.2	17.1	
9.5	45.3	41.1		10	23.4	34.7		10	19.7	57.8		9.8	59.0	27.2		9.5	30.5	0.8	
8.9	47.1	24.7		9.5	54.7	53.4		9.4	21.2	36.1		9.8	45 15.7	29.6		9.5	34.4	44.9	
9.7	49.4	49.4		9.5	16 18.6	54.7		10	23.5	49.1		9.6	16.3	20.0		9.8	42.7	11.6	
9.0	59.6	34.0		9.9	21.1	18.6		9.5	29.2	35.2		8.2	40.9	35.9	K	8.5	56 7.0	50.5	K
9.3	2 18.9	14.2		10	22.4	11.7		9.5	41.9	34.0		8.8	42.0	31.8	K	10	32.9	22.1	
9.4	24.4	5.3		9.4	34.5	18.6		8.5	31 15.1	11.0	Sj	9.5	46 3.3	21.9		8.4	54.6	3.5	Sj
9.6	26.8	3.0		9.5	53.8	54.3		8.9	52.4	3.8	K	10	10.0	29.6		10	57 12.4	41.8	
9.4	31.6	29.6		9.4	17 6.0	32.8		9.8	32 21.3	42.9		8.7	13.2	36.2	Sj	7.2	12.7	14.4	K
9.9	55.1	35.1		9.8	18.0	25.5		9.8	32.3	2.3		9.5	28.1	48.8		9.4	15.3	50.0	
9.4	57.4	6.2		8.7	20.7	54.5	Sj	9.6	57.2	57.3		9.7	36.0	33.1		9.8	15.6	26.9	
8.5	3 4.5	26.5	K	8.2	37.2	1.7	K	9.8	33 2.7	20.2		10	40.1	48.0		9.9	35.9	36.6	
9.5	50.0	14.8		10	18 2.2	1.1		9.0	29.5	12.4		8.3	47 11.4	49.7	Sj	9.8	42.5	24.4	
9.0	4 24.1	20.8	Sj	9.8	3.0	21.5		10	54.6	15.9		9.1	20.1	35.7		9.8	44.1	51.4	
9.1	5 5.7	24.2		9.8	5.3	6.3		9.0	34 14.0	48.1		9.9	52.7	16.0		8.4	58 1.7	43.6	K
9.0	25.6	53.2	WC	10	24.6	48.4		9.4	45.5	33.1		10	53.3	41.9		9.8	27.0	39.1	
9.5	39.9	23.3		9.1	28.9	57.5		8.8	46.3	29.4	Sj	9.9	48 22.5	8.6		9.8	27.9	19.6	
9.5	40.3	41.0		9.3	56.3	30.3		9.8	57.7	17.3		8.0	28.6	20.5	K	8.9	37.2	10.0	
10	41.7	55.8		10	19 5.8	39.0		9.5	35 2.6	42.3		8.6	29.0	40.8	K	9.4	53.9	26.1	
9.3	45.6	18.9		8.0	35.9	44.1		9.5	21.8	18.7		9.4	40.3	52.8		8.8	59 19.2	30.8	
7.3	50.4	45.2	K	9.9	40.3	57.9		9.6	25.0	47.0		9.5	49 2.4	22.0		9.0	23.5	5.4	
9.6	54.9	30.2		9.5	49.1	19.6		9.0	30.3	19.5		9.3	37.9	2.8		9.5	32.9	42.7	
9.4	6 28.3	29.7		9.3	20 0.0	16.9		6.8	33.9	1.9	K	9.5	41.3	54.8		10	0 13.7	32.5	
9.4	42.1	22.1		9.5	13.6	31.6		7.8	36 3.2	44.5	K	9.4	49.5	41.9		8.0	58.6	23.7	K
9.5	7 5.9	31.5		7.9	14.1	10.4	K	8.6	11.4	1.0	K	9.7	54.8	16.6		9.3	1 6.3	59.5	
9.8	6.7	26.7		9.5	39.5	47.2		9.7	17.4	46.5		8.0	50 2.4	45.6	Sj	9.2	37.5	16.1	
9.5	30.2	37.7		10	41.3	6.6		9.7	25.0	48.2		9.5	12.5	6.0		9.8	51.5	25.7	
9.8	37.6	1.1		10	55.3	1.7		10	25.1	25.1		8.6	20.5	39.1		8.0	2 3.8	37.6	L
9.8	45.4	0.6		9.8	21 32.6	27.2		9.5	34.1	51.2		9.0	38.7	13.5	L	9.5	26.5	1.0	
10	8 1.6	52.0		9.3	56.1	22.1		9.5	37 1.8	22.1		9.4	47.9	38.0		9.3	33.0	58.6	
9.8	15.3	52.5		9.7	22 49.4	14.7		10	5.8	46.9		9.5	48.2	12.0		9.5	57.0	43.9	
9.3	46.4	7.6		9.2	55.1	20.0		9.5	20.8	19.2		7.5	49.3	19.5	L	9.0	3 15.3	54.6	K
9.2	51.0	15.0		9.3	23 2.5	55.7		8.9	22.6	29.9	Sj	9.2	51 21.5	2.3		9.5	17.2	52.8	
9.5	9 26.6	30.7		9.5	6.0	30.1		9.2	28.9	26.9		8.8	37.7	29.7		9.4	28.7	28.9	

1101—1160				1161—1220				1221—1880				1281—1340				1341—1400			
	5h	—6°			5h	—6°			5h	—6°			5h	—6°			5h	—6°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	3 38.0	44.4		9.3	16 28.9	39.9		10	26 18.4	31.9		9.0	32 53.3	51.5	K	9.5	46 8.4	31.2	
9.5	49.1	47.0		9.4	31.8	35.5		9.3	21.3	49.4		9.5	33 4.2	46.1		9.4	17.6	8.7	
9.2	55.8	33.6		8.5	41.3	58.7	K	9.2	22.2	9.7		9.2	28.8	15.0		9.0	27.0	26.6	
8.0	4 3.6	12.1	K	9.5	50.0	43.5		9.0	22.8	38.6	K	9.5	42.4	55.5		8.0	30.9	17.9	
9.0	13.4	59.5	K	8.4	54.4	1.7		9.0	33.3	29.2	K	9.5	56.9	35.0		8.5	39.7	35.7	
9.0	5 17.5	2.6		8.1	17 13.3	56.9	K	9.0	50.1	43.6	K	9.0	34 25.3	50.5	K	9.5	53.9	26.8	
9.0	29.7	24.5		9.0	24.6	17.7		8.5	27 1.4	56.6	K	9.5	50.8	19.8		8.5	47 1.3	47.1	
9.4	37.9	39.8		9.5	30.6	15.9		9.3	9.4	58.5		9.5	35 7.8	9.2		8.8	9.1	26.2	
6.5	41.6	13.8	L	9.2	37.6	22.2		9.5	17.5	45.4		9.9	30.9	15.3		9.5	9.7	6.2	
9.5	59.3	29.2		10	47.2	44.3		10	37.5	6.2		9.6	32.8	26.0		9.5	48 29.4	51.0	
10	6 14.4	59.4		10	18 0.1	41.4		9.0	43.0	6.2	S	9.1	38.0	54.3		9.0	49 8.3	47.8	
8.0	45.3	54.5	K	9.5	27.1	47.4		9.7	43.3	6.0		9.8	46.0	52.7		9.5	12.9	31.0	
9.0	55.1	47.8		9.5	39.3	55.9		6.8	54.5	6.2	L	6.5	51.3	52.3	Sj	9.5	38.7	1.6	
9.0	57.3	57.2		9.4	49.6	24.8		5.4	56.4	6.2	L	9.5	36 10.9	26.2		8.5	50 4.8	12.7	K
9.0	7 7.1	49.1		7.5	50.5	29.5	L	9.5	58.7	22.6		9.5	32.8	18.4		9.5	14.7	0.6	
9.3	28.6	10.2		8.0	51.5	7.5		9.5	28 3.7	21.2		9.5	39.0	31.5		9.5	22.9	29.2	
9.5	32.1	46.9		9.0	19 13.0	42.0		8.3	4.5	1.7		8.5	37 0.3	47.8		9.2	24.8	24.4	
9.5	41.7	22.7		9.3	15.7	31.9		8.5	5.0	39.5	K	9.1	1.4	29.6		9.5	25.7	48.7	
9.5	8 2.1	14.7		9.5	27.3	52.3		10	7.1	40.9		9.5	8.0	32.7		6.5	36.7	6.4	K
9.5	5.6	13.5		8.5	38.8	37.5	L	8.2	10.7	7.8		9.4	15.2	41.1		8.8	52.4	29.6	
7.5	6.3	58.4	K	9.0	51.0	39.8	K	3	21.4	0.2	L	8.5	17.3	49.2	L	9.4	51 8.0	48.4	
10	16.2	9.2		9.5	20 8.2	47.9		9.0	29.7	11.1		7.3	31.5	55.4	L	9.7	11.9	5.8	
9.5	42.3	54.8		9.5	9.0	39.9		9.5	30.8	27.7		9.5	38 3.8	6.4		8.8	20.4	52.2	K
9.5	44.0	3.3		9.0	11.6	11.9		9.2	38.3	50.7		9.5	25.8	15.8		9.3	39.4	28.3	
9.3	9 5.8	31.9		9.0	21.7	45.2	K	9.1	40.7	6.6	K	9.8	30.2	43.5		9.7	43.5	54.0	
9.6	6.5	6.4		9.5	28.6	18.6		9.2	44.2	47.1		9.6	31.3	47.4		9.4	48.3	41.1	
8.7	19.9	40.6		9.3	39.4	54.1		8.5	54.7	22.1	K	9.5	36.7	0.2		9.3	50.1	48.9	
9.0	32.0	45.0		9.5	52.7	26.6		9.5	59.4	56.5		9.0	39 5.8	11.7		9.5	52 0.7	1.5	
9.0	44.3	57.1		9.3	21 17.6	10.4		9.5	29 0.6	26.7		9.2	13.2	42.8		9.5	4.7	1.1	
9.7	48.5	25.7		9.4	29.8	32.5		9.4	1.6	25.3		9.5	42.7	0.6		9.5	14.4	28.7	
9.5	10 18.0	41.5		9.0	36.8	33.8		10	3.0	29.8		8.8	40 21.9	25.9		9.5	16.9	26.5	
8.5	39.1	47.3	K	8.5	22 1.2	46.4	K	9.3	10.0	44.0		9.5	30.5	55.7		7.0	46.2	36.2	K
9.0	52.1	45.5		9.8	6.3	16.3		9.3	23.2	48.4	Sj	7.7	43.4	29.5	L	9.4	53 4.2	26.0	
9.0	56.7	35.5	K	10	19.4	6.3		8.3	27.3	32.9		8.5	41 1.8	10.8		9.5	17.1	30.8	
9.0	11 22.3	57.0		9.6	23.1	16.5		6.4	29.7	9.7	K	10	6.6	42.2		9.0	22.7	58.9	
7.5	28.7	23.8	K	9.5	54.3	51.8		9.5	33.9	31.0		9.5	11.8	12.2		10	37.7	6.8	
9.2	12 6.2	53.4		9.0	23 1.1	2.1		9.0	54.7	15.1		8.0	17.2	42.3	L	9.3	46.5	51.8	
9.4	9.1	47.8		9.3	3.1	42.9		9.7	30 3.7	12.3		9.3	25.2	47.7		9.0	54 6.8	12.1	
9.5	16.5	1.8		9.2	7.3	23.5		9.4	9.2	40.2		9.6	32.2	44.9		9.5	32.2	38.3	
9.3	36.6	16.6		8.0	11.1	6.1	L	9.8	14.3	31.9		9.5	42.0	45.0		9.5	42.9	28.6	
8.5	13 2.5	0.2	R	9.1	11.6	27.6		9.7	18.7	6.9		9.5	42 6.8	17.9		8.5	55 1.5	49.0	K
9.3	9.6	18.5		9.0	22.2	19.9		6.7	21.9	1.5	K	9.0	24.1	38.7		9.0	5.8	13.4	
9.0	17.7	27.5		9.5	54.3	34.2		9.8	38.1	39.6		8.5	28.5	14.2	K	9.5	8.7	3.1	
9.0	22.0	42.3		8.0	55.2	18.6	L	9.0	44.8	48.1		9.5	44.0	57.4		8.5	23.4	47.2	K
9.0	22.1	34.7		9.8	24 0.5	47.7		9.1	45.3	34.3		9.5	44.1	39.1		10	55.5	24.7	
9.0	39.8	34.7		9.5	15.2	17.3		9.8	46.0	31.8		9.7	50.6	51.8		9.0	56 2.6	35.7	
8.9	48.3	31.7		6.8	18.2	49.1	L	8.8	48.3	49.0	B	9.9	54.5	51.8		8.2	23.4	24.1	B
9.3	59.3	38.3		9.5	25 4.2	17.2		9.5	56.7	19.9		9.8	43 15.7	56.3		9.5	26.0	7.7	
9.8	14 6.7	31.1		8.2	4.7	49.0	K	8.5	58.2	29.5		9.5	19.4	31.2		9.3	47.3	39.2	
9.3	10.6	8.2		9.3	9.2	14.5		9.3	31 4.3	31.2		9.6	23.0	36.0		9.0	59.9	44.5	
9.3	15.2	53.4		9.1	12.5	30.7		8.5	14.7	13.7		9.5	47.7	23.7		6.0	57 10.8	42.3	Sj
9.5	29.6	9.1		8.5	15.6	30.5	K	9.5	25.7	9.7		9.0	49.8	16.1		9.5	11.0	54.9	
8.5	49.2	50.1		9.5	18.5	49.6		9.3	27.1	30.6		9.5	44 13.1	37.8		9.0	11.5	39.4	K
9.5	15 9.7	35.4		9.0	22.3	24.4		8.8	30.7	15.0		8.8	33.2	41.3	K	9.5	15.8	7.1	
9.0	27.5	3.7		9.0	32.1	6.5		6.5	35.1	39.6	L	8.8	41.4	50.4	K	9.0	21.7	2.6	K
9.6	43.8	32.2		9.0	37.5	59.7	K	10	38.2	43.0		9.6	45.6	52.3		9.3	28.3	41.0	
9.3	47.3	34.2		8.9	48.3	37.3	K	8.4	56.5	34.8		8.9	45 10.4	53.3	K	9.0	28.9	20.0	
8.5	55.2	51.1	K	9.0	48.4	36.4	K	9.0	57.8	10.4		9.5	35.1	38.1		10	44.3	40.9	
9.5	16 1.7	25.1		9.5	26 11.2	13.7		9.1	32 4.8	11.0		9.2	55.9	1.3		9.2	54.7	2.3	
9.3	21.6	25.3		9.8	12.6	30.7		9.0	41.5	38.1		10	46 7.0	2.3		9.0	57.2	5.9	K

1253: Nebelstern GC 1202

1401—1460				1461—1520				1521—1580				1581—1640				1641—1700			
	5h—6h	—6°			6h	—6°			6h	—6°			6h	—6°			6h	—6°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.7	58 27.1	30.8		8.0	6 53.3	46.9	L	9.8	15 8.6	3.3		9.0	22 31.7	58.0		8.7	30 49.6	57.5	K
9.0	34.7	2.2		9.5	53.8	14.9		10	12.5	30.9		9.4	37.6	47.5		9.5	31 10.9	42.0	
9.0	36.3	37.1		8.5	7 21.9	48.7		9.8	13.3	8.6		9.6	38.7	36.8		9.1	18.4	51.2	K
8.5	38.0	5.7	K	9.5	26.9	39.4		10	14.4	26.8		9.4	50.6	3.0		9.5	19.8	34.5	
8.5	44.5	20.1		9.2	27.0	35.2		10	54.0	35.1		7.8	23 13.5	20.1	B	9.5	29.0	55.2	
10	49.9	14.6		9.5	30.7	21.1		8.4	56.8	28.0		9.3	29.1	59.1		9.8	29.1	23.7	
8.0	54.8	37.4	K	9.0	35.3	32.4	K	9.0	16 11.0	20.9	K	9.3	37.9	32.1		10	37.3	11.2	
9.5	59 27.3	39.1		10	39.9	29.7		9.8	16.1	56.0		9.5	48.7	40.2		9.7	38.6	34.3	
9.5	35.0	24.9		4.5	46.1	13.8	K	9.4	30.6	45.0		9.5	54.9	51.1		9.6	47.2	41.4	
9.5	40.1	56.0		8.9	55.4	48.6		9.5	33.1	58.7		10	55.4	14.0		9.6	32 9.5	36.8	
9.5	43.9	33.4		9.8	8 1.7	43.9		9.5	46.2	40.7	Sj	9.8	24 3.6	35.2		9.0	11.6	58.4	Sj
6.0	53.8	12.0	B	8.8	10.2	18.8	K	9.2	17 4.9	30.3		9.8	11.9	35.1		9.9	13.9	36.6	
9.5	0 7.3	42.2		8.9	19.0	7.2	K	9.3	8.2	29.9		9.1	25.8	8.0		9.5	17.0	7.8	
9.5	27.6	24.6		10	30.9	28.1		9.8	20.2	7.8		10	28.9	13.7		9.2	17.4	35.0	
9.5	28.6	23.7	Sj	8.0	42.1	9.7	K	8.3	33.4	48.9	K	8.8	42.5	52.6		9.0	28.1	58.6	
9.5	51.4	44.4		9.8	9 14.0	54.4		9.2	45.0	53.1		9.5	49.8	55.7		9.7	29.4	33.3	
9.0	59.8	12.1		8.7	19.1	8.2	B	9.0	46.8	11.2		9.0	50.6	20.3		9.8	32.2	29.2	
9.0	1 0.8	21.0		8.5	22.5	25.6	K	9.9	18 4.5	17.0		8.7	25 32.2	23.2		8.5	36.1	20.5	
8.9	12.6	53.2	K	9.5	32.8	44.0		9.6	36.1	55.3		9.2	33.8	26.1		9.1	38.9	51.4	
8.8	20.0	31.2		9.5	39.3	23.9		9.8	51.9	14.8		9.4	45.4	26.0		9.4	44.4	25.2	
9.6	20.8	34.1		9.3	50.4	52.9		9.0	53.5	28.5	K	9.5	49.9	28.4		9.5	46.7	32.2	
9.0	38.2	37.2	K	8.3	10 0.4	4.0	L	8.5	54.2	7.6	Sj	9.8	26 25.7	43.2		9.8	33 2.7	42.6	
9.3	43.9	24.0		9.1	0.5	43.8		9.0	55.9	17.0		9.1	32.2	39.5		9.7	11.9	11.4	
7.0	46.4	48.3	K	9.8	1.9	28.4		9.6	19 1.1	34.7		9.3	42.4	26.5		-7.3	14.4	13.1	L
9.5	48.7	57.7		8.3	6.1	11.8	L	9.6	2.5	20.8		8.6	43.1	27.5		9.1	26.2	4.0	
9.5	52.3	40.8		9.1	47.6	37.7		9.4	7.0	24.9		9.0	47.0	0.2	K	9.5	44.5	19.6	
9.3	2 4.5	33.2		7.0	11 5.7	40.6		9.5	7.6	20.8		9.3	53.2	48.7		9.5	44.8	35.3	
9.2	9.9	22.1		9.0	6.8	46.2		9.8	12.2	7.4		10	54.0	38.0		9.4	52.3	47.4	
9.5	18.3	39.9		10	31.5	55.3		9.8	32.7	27.9		9.3	57.9	51.1		9.2	59.0	53.0	
9.9	25.5	26.2		9.2	45.4	5.1		9.8	43.5	52.8		10	27 2.0	33.8		9.7	34 0.4	35.6	
9.0	26.9	18.1	Sj	9.0	12 22.1	24.1	K	9.3	48.7	41.3		8.9	5.2	31.8		9.9	0.8	27.1	
7.5	28.2	31.0	K	10	25.6	22.8		9.8	51.0	57.1		9.8	5.9	14.8		9.4	2.3	21.6	
9.8	40.5	16.9		9.4	32.4	33.3		9.8	53.0	53.3		9.7	17.6	33.6		10	3.8	33.9	
9.5	46.6	57.3		9.8	32.5	19.2		9.3	55.2	43.7		9.8	28.7	40.0		9.8	10.0	39.6	
9.5	47.9	23.5		8.8	41.6	45.2	K	9.6	20 13.7	10.7		9.8	37.1	20.7		9.0	11.1	31.0	
9.5	3 14.8	18.6		10	46.6	21.4		9.1	14.5	27.9		8.5	38.9	2.2	Sj	9.8	12.3	47.5	
9.5	34.0	40.9		9.5	54.5	28.7		9.2	33.2	8.0		9.7	40.6	3.3		9.4	13.7	55.6	
9.8	53.2	59.9		9.3	13 2.6	33.3		10	36.6	3.5		9.1	45.6	34.6	K	9.4	16.2	2.6	
6.3	59.2	43.8	K	9.4	11.3	45.0		9.3	41.2	5.5		9.5	28 3.6	34.3		8.5	24.5	0.6	K
neb	4 1.7	10.9		10	16.6	4.3		8.9	47.3	12.5		9.4	4.0	13.8		10	28.3	12.0	
8.5	9.3	52.3	K	9.7	19.5	28.4		9.4	55.4	51.5		9.2	30.1	24.7		9.5	38.1	32.7	
8.0	31.1	56.3	K	9.5	20.1	2.2		10	21 1.9	7.5		9.5	33.5	54.3		8.5	43.6	1.5	K
9.5	42.4	46.0		9.8	29.8	9.1		9.3	2.3	34.5		9.5	36.0	8.1		9.4	45.7	6.8	
9.7	44.8	7.3		9.0	39.0	15.6	K	8.8	2.6	49.9		9.7	36.2	3.5		8.7	35 4.4	12.4	
9.0	48.3	26.2		9.3	43.9	32.0		9.8	17.1	1.2		9.7	49.1	25.2		9.5	18.9	53.3	K
5.2	48.5	31.3	K	9.4	44.7	31.9		9.4	18.7	41.3		9.4	29 33.8	38.9		9.5	22.7	46.3	
9.8	50.5	52.3		8.2	56.1	37.7	K	9.5	19.2	11.3		10	34.9	12.1		9.8	26.9	21.3	
9.5	5 14.9	22.1		9.0	59.6	1.1		8.1	23.1	27.6		9.1	37.0	15.3	K	9.3	38.0	58.1	
9.5	32.3	19.8		9.7	14 7.5	31.1		9.5	30.1	6.7		8.7	41.9	45.7		10	39.7	28.4	
9.3	33.2	42.6	Sj	9.4	7.6	36.8		8.7	42.0	52.7	L	9.8	50.4	51.5		10	40.6	5.1	
9.4	51.4	50.0		9.0	12.8	43.3	Sj	9.3	43.3	35.2		9.7	50.4	17.5		9.1	42.9	14.2	
9.5	56.0	30.4		9.9	24.1	19.6		9.7	45.2	36.8		9.4	53.2	6.1		10	43.4	2.8	
9.0	6 3.1	19.6		9.5	32.1	48.1		9.4	45.2	41.2		10	56.6	35.4		9.5	51.2	33.9	
10	6.4	19.9		10	34.2	7.5		5.5	47.9	56.7	K	10	56.6	38.6		9.8	52.4	38.0	
9.4	12.3	44.2		9.8	40.8	28.3		5.5	48.9	56.8	K	10	58.3	12.1		9.8	54.6	0.3	
8.4	12.9	22.0	Sj	9.8	43.0	30.1		9.3	22 0.8	24.3		9.8	30 13.7	3.5		9.7	56.6	26.5	
9.5	14.2	40.6		9.0	53.6	22.7		9.5	10.0	7.8		9.4	22.1	2.2		8.7	36 3.0	38.0	K
10	16.4	50.7		9.6	55.5	56.4		9.5	15.2	42.0		10	34.5	21.8		9.4	6.3	36.9	
9.5	19.7	3.7		10	56.4	4.0		10	23.1	0.4		9.3	46.3	48.4		9.8	9.5	58.6	
9.0	34.8	9.1	K	9.9	57.8	13.1		10	26.0	16.6		9.5	48.3	28.7		9.5	13.9	34.9	

1415: Nebelstern GC 1362 1431: Nebelstern GC 1373 1469: roth

1701—1760				1761—1820				1821—1880				1881—1940				1941—2000			
	6h	−6°			6h	−6°			6h	−6°			6h—7h	−6°			7h	−6°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.3	36 28.8	51.6		9.5	43 7.1	56.7		8.8	48 12.7	53.8		9.5	54 14.3	40.9		9.3	1 29.2	28.9	
10	36.1	45.0		9.3	10.2	58.4		10	16.2	22.5		10	20.0	8.0		10	36.1	58.8	
10	40.4	36.8		8.8	15.1	19.4		9.8	17.5	39.7		9.4	23.9	23.0		9.7	36.8	35.3	
10	47.2	35.7		8.2	15.9	1.5	L	10	33.9	39.3		9.5	24.7	14.8		9.1	50.5	43.3	
8.7	47.7	46.4	K	9.3	32.9	33.1		10	34.2	3.5		8.7	26.5	43.6	K	9.4	2 1.7	49.9	
9.4	37 6.1	43.0		9.5	36.3	33.5		10	37.3	5.0		9.3	29.9	27.1		9.4	2.5	52.3	
10	6.2	58.9		9.6	37.3	47.8		9.8	45.1	8.2		8.2	30.2	6.6	L	9.0	8.9	14.0	
9.4	10.7	6.8		10	44.2	52.2		10	46.3	34.8		9.5	48.0	12.0		8.7	12.7	49.6	Sj
9.0	14.5	59.5	Sj	9.4	45.4	1.0		9.6	54.2	27.2		8.7	48.1	50.5	Sj	9.5	16.4	59.7	
9.9	24.0	50.7		9.3	47.7	23.0		10	58.7	30.1		10	49.8	3.6		9.9	16.5	51.7	
9.1	28.8	8.1		8.7	52.5	56.2	K	8.8	49 7.3	56.0	Sj	9.0	56.6	44.6	K	9.1	22.7	48.7	
9.4	35.9	52.5		9.3	44 10.8	56.3	M	10	16.6	45.4		9.1	55 0.1	2.4		9.0	23.2	6.1	
9.4	58.2	6.5		9.8	22.2	49.2		9.5	24.0	43.8		9.5	1.2	22.2		10	24.1	9.0	
9.5	38 0.1	29.6		8.7	23.2	23.5	Sj	9.5	29.7	41.2		9.2	1.6	0.8		9.0	29.5	30.2	
9.8	3.7	37.9		7.3	30.0	47.8	K	9.8	33.7	3.0		9.4	8.2	6.0		8.7	35.1	55.1	
9.8	4.4	46.0		10	39.6	55.2		9.0	34.9	9.5		9.8	23.4	33.3		9.6	46.8	22.4	
9.5	6.3	44.9		10	40.1	30.0		9.5	39.1	56.9		9.4	31.9	35.6		9.3	3 3.6	20.0	
9.4	9.5	37.7		10	46.0	47.4		9.1	53.2	0.3		9.8	34.4	40.1		8.5	4.8	59.6	M
9.5	12.7	5.2		9.5	48.8	54.6		9.8	54.5	16.1		9.6	35.3	8.9		10	5.1	9.9	
9.8	14.7	6.2		9.8	50.5	54.0		9.2	56.7	2.0		8.7	35.7	43.1	K	9.8	6.7	57.6	
9.2	21.7	4.9		9.6	45 0.6	52.5		9.6	59.5	15.8		9.5	37.6	19.5	Sj	9.0	7.6	11.1	
9.5	24.6	41.7		10	3.5	13.6		9.6	50 4.8	8.3		9.0	40.8	35.0		9.0	7.6	2.9	
9.9	24.8	6.0		9.9	3.9	15.5		9.3	10.2	20.2		8.5	44.2	49.1	K	10	14.0	17.8	
9.0	26.7	59.1		10	5.4	8.9		9.8	10.7	25.8		8.7	56 7.3	40.9	K	9.3	16.6	26.6	
9.5	29.2	44.6		9.5	7.6	19.3		9.8	13.6	39.2		9.8	17.8	23.7		8.9	17.1	49.1	M
10	35.9	36.0		9.1	8.0	57.2		9.8	19.1	46.1		10	21.4	39.7		9.4	43.2	28.7	
10	47.9	34.1		8.1	8.1	17.2	K	9.4	24.0	28.6		9.4	27.0	43.5		9.3	46.9	37.0	M
8.2	52.0	45.4	B	9.4	12.3	19.3		8.8	49.5	16.5	M	8.8	29.0	28.4		9.0	49.8	6.9	
9.8	57.3	49.1		10	19.8	55.2		9.7	53.2	30.2		9.8	29.5	25.0		9.6	50.1	31.9	
9.8	39 0.5	54.2		10	25.3	47.4		9.3	59.2	22.4		9.2	30.1	7.4		9.3	56.6	20.8	
9.3	4.4	29.9		10	40.5	20.5		9.7	51 1.9	32.3		8.2	32.5	42.4	Sj	10	58.7	49.8	
9.2	14.5	16.7		9.1	41.6	42.2		10	4.6	47.8		10	51.5	53.8		9.2	4 5.9	56.6	
9.3	25.1	27.6		10	53.6	29.4		9.8	7.4	22.2		9.8	53.6	1.2		8.7	14.7	42.6	M
8.5	33.7	24.8	B	10	46 2.7	1.4		9.1	10.7	49.9		9.3	55.9	56.9	R	9.2	15.3	31.7	
9.4	59.6	40.0		8.5	10.0	34.6	M	8.7	26.1	19.0	K	9.1	56.9	1.8		9.9	35.0	28.2	
9.8	40 12.5	34.1		9.0	12.1	47.1		9.0	28.7	24.8	K	10	57 16.6	20.3		9.7	36.1	36.6	
9.8	17.0	46.8		9.8	24.6	20.3		9.5	32.0	41.6		9.6	24.8	35.2		9.5	46.9	42.3	
9.8	17.1	42.4		9.5	30.6	17.1		9.4	32.4	10.5		8.8	36.4	38.0		8.6	49.3	19.7	K
9.5	26.7	2.9		9.0	38.3	47.7	M	7.5	34.7	59.2	Sj	9.3	40.5	13.8		9.0	49.8	13.0	
9.0	41 0.5	14.5	Sj	9.1	40.4	53.7		9.8	39.1	16.6		9.5	42.3	25.8		9.1	55.4	13.6	M
9.1	1.3	18.7		9.8	54.3	27.9		9.0	40.9	10.2	Sj	9.1	58 18.7	59.5	K	9.4	55.9	12.9	
9.5	3.2	33.8		9.2	57.2	36.9	M	9.0	57.7	55.2	K	9.2	29.8	35.2		9.1	5 20.2	25.0	K
9.4	5.1	36.0		8.7	58.4	44.6	M	9.1	52 7.3	54.6	K	10	47.3	1.7		8.9	23.5	59.6	
9.8	8.1	36.2		8.8	47 5.0	55.8		10	14.6	12.3		9.4	52.1	50.1		9.1	26.0	18.3	K
10	10.4	11.5		9.0	5.8	7.5	Sj	10	34.7	30.3		9.0	59 2.7	24.6	Sj	9.0	29.0	31.5	
9.8	20.8	53.3		9.0	7.8	12.0		9.8	55.6	50.5		9.2	38.0	29.2		10	32.8	39.9	
9.8	28.2	27.6		8.8	13.6	2.0		9.0	53 1.3	57.7	K	9.8	46.9	39.4		9.7	36.7	52.1	
9.5	42.1	9.1		8.0	14.4	12.7	Sj	9.3	7.4	36.3		9.2	50.1	48.7		9.8	39.0	51.0	
9.5	50.6	36.0		9.1	14.7	26.2		8.8	12.2	31.3		9.8	0 1.2	27.5		7.9	46.9	54.5	Sj
9.4	42 1.1	18.2		9.4	24.8	13.6		8.9	14.7	57.5	K	9.5	3.4	58.3		10	56.4	59.8	
9.8	1.8	40.0		9.1	35.5	44.0		9.8	31.1	20.0		9.0	5.6	49.2		9.0	6 0.1	54.1	
9.0	10.6	22.2	K	9.0	37.8	26.6	M	8.2	37.2	14.5	L	9.8	16.6	21.0		9.8	6.3	28.4	
9.0	19.2	1.1		9.4	40.7	32.1		9.4	39.1	44.8		9.5	23.1	50.0		9.2	12.2	1.6	M
9.8	28.7	42.7		9.0	42.9	11.9		9.0	47.9	43.7	K	9.5	40.7	33.1		8.8	15.8	11.3	K
8.7	28.9	26.1	K	9.7	55.7	58.8		9.0	50.3	49.4		9.3	49.5	53.2	K	9.3	21.7	57.3	
8.5	29.2	58.9	K	9.1	58.4	37.9	M	9.7	51.8	25.0		10	54.8	55.0		9.4	25.4	39.5	
9.4	30.3	57.2		8.5	48 1.0	27.3	L	10	53.8	33.2		10	55.3	51.6		9.8	34.3	16.6	
9.0	35.3	6.9	L	9.6	3.8	42.4		9.2	57.1	1.2		9.8	1 5.2	33.1		9.3	36.2	6.3	
9.0	41.0	14.3		10	3.9	37.0		10	54 7.5	55.2		9.9	16.0	59.4		9.8	40.9	38.9	
9.0	43 3.0	38.0		9.3	10.3	5.8		9.3	13.4	31.9		9.1	28.2	24.7	K	9.0	46.5	48.5	

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	7h	−6°			7h	−6°			7h	−6°	′		7h	−6°			7h	−6°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.0	6 50.9	24.2	K	9.5	14 6.1	46.3		9.3	21 1.2	5.0		10	27 7.7	33.8		9.4	34 27.7	12.2	
9.4	51.9	30.2	K	9.3	9.8	46.5		9.1	4.8	13.5	K	9.8	14.6	23.7		9.0	32.2	23.6	K
9.6	55.2	1.5		9.8	14.0	59.2		9.7	14.4	25.8		9.3	16.4	6.8		8.0	41.7	48.7	K
9.4	55.8	57.3		9.0	14.4	1.7		7.9	18.7	52.0	L	8.1	22.9	34.7	K	9.3	45.8	54.3	
9.8	7 7.6	50.1		8.7	23.0	37.3		10	24.0	2.6		8.8	29.3	5.4		9.1	59.4	44.6	
10	8.2	8.8		9.5	25.5	20.0		9.9	28.3	59.2		9.5	28 9.5	59.3		9.7	35 11.4	55.9	
10	29.9	40.8		9.0	25.7	7.9		9.0	33.0	40.0		9.4	24.4	8.0		8.8	16.8	10.0	
9.5	30.5	16.6		9.5	27.9	49.6		9.5	33.9	12.2		9.5	42.9	42.2		9.7	18.9	55.2	
9.0	40.1	23.5	M	9.4	30.3	56.1	M	10	34.6	57.5		10	47.1	21.7		9.0	20.3	42.0	M
9.2	50.6	52.9		9.5	36.1	5.4		9.0	38.7	53.4	M	8.3	51.8	56.6	L	8.2	22.9	59.1	K
9.8	52.8	46.0		10	40.2	0.0		10	43.7	59.3		8.5	29 7.8	1.8	M	9.8	47.4	13.2	
9.4	58.1	53.1		9.0	45.3	24.1		9.4	49.3	14.0		9.6	10.8	9.2		9.8	49.8	37.0	
9.1	8 1.5	47.7	M	9.1	58.5	30.2		8.8	53.1	24.5	K	9.0	11.6	7.1	Sj	9.4	58.6	0.3	
9.5	3.7	1.6		9.0	15 0.5	22.2	M	9.5	22 6.4	18.0		9.2	26.0	0.5		9.1	36 4.8	7.6	
9.2	13.2	41.5		9.3	2.3	9.7		9.0	23.5	26.4		9.5	28.5	52.4		9.5	24.3	0.3	
8.6	30.3	49.9	K	9.1	6.7	59.9	K	10	30.0	30.8		10	37.1	29.8		9.7	26.8	40.8	
9.5	36.7	18.0		9.1	25.4	36.0		8.9	32.0	23.9	K	9.8	37.1	12.0		9.7	29.0	32.8	
9.0	48.6	20.6		9.0	28.2	28.9	K	9.6	35.8	0.7		9.3	43.2	53.6		9.4	43.5	31.2	
8.8	49.3	30.6		9.8	34.3	31.1		10	59.8	6.9		9.8	50.0	17.1		9.1	46.9	42.8	
9.8	53.2	43.5		10	35.2	28.9		9.5	23 3.9	49.2		9.8	54.3	1.3		8.2	47.8	56.0	K
9.1	56.7	55.7	K	9.8	41.1	56.2		9.0	8.0	22.4	L	9.3	56.9	39.4		8.5	50.0	22.4	L
9.8	58.6	21.8		9.5	46.6	49.6		9.5	13.1	44.9		9.4	30 14.4	41.8		9.5	59.1	7.4	
9.3	9 11.8	7.5		9.0	57.1	49.4	K	9.8	13.9	50.2		9.3	25.3	55.1		9.0	37 16.0	21.3	M
9.0	12.0	19.9		8.8	16 18.8	22.0	K	8.5	18.0	40.0	K	10	27.4	16.4		9.5	23.4	46.5	
8.7	20.5	42.5	Sj	9.4	24.4	37.7		10	22.7	8.8		9.3	40.0	48.4		9.0	30.1	30.0	
10	34.7	33.5		9.8	30.9	34.3		8.0	39.6	25.0	K	9.0	40.4	55.6		8.3	30.5	56.9	K
9.3	45.5	42.8		9.8	47.4	30.0		9.6	42.4	39.5		6.8	47.3	38.1	K	9.7	37.3	35.6	
8.8	49.6	4.5		9.5	48.4	10.5		10	47.7	8.1		9.5	48.4	31.7		9.0	46.2	34.4	K
8.6	51.8	47.1	K	9.5	49.6	2.2		9.5	58.5	26.9		9.1	49.5	58.0		8.5	54.8	5.3	Sj
8.7	54.2	55.6	K	8.8	55.1	46.3	K	8.5	24 1.6	1.4	K	9.0	50.1	17.0		9.8	57.3	7.3	
8.7	10 0.3	35.6	K	9.8	17 0.0	22.2		9.4	24.8	10.3		9.8	58.2	16.8		9.8	59.7	48.5	
6.3	26.8	25.5	K	9.8	7.3	13.0		9.4	25.4	44.8	Sj	9.1	31 5.1	24.1		9.8	38 13.4	15.7	
10	54.3	18.6		9.5	16.8	11.9		8.4	34.2	28.8	L	9.5	9.2	14.6		9.2	19.6	35.4	
10	59.4	21.2		9.8	21.2	51.7		9.4	43.3	44.9		9.4	27.5	42.0		9.1	27.6	26.0	K
9.1	11 9.2	52.8	M	9.3	24.9	26.4		9.5	49.7	26.8		9.8	32.8	7.1		9.5	31.6	31.0	
9.8	10.2	38.5		9.5	25.5	35.9		8.3	55.5	23.7	L	9.3	33.2	32.1		9.5	36.8	37.4	
10	12.5	58.7		9.2	29.3	14.4		8.2	25 4.3	57.3		9.4	33.3	25.4		9.0	42.5	52.8	
9.8	16.8	38.5		9.6	34.6	4.4		9.1	12.4	16.5	M	10	48.7	12.9		9.2	48.6	24.1	K
9.8	23.7	48.7		9.3	18 4.1	43.7		8.8	13.2	55.2		9.5	51.8	2.9		9.5	49.4	13.0	
9.7	29.5	12.8		9.2	11.2	49.5		9.8	23.5	45.2		10	54.2	34.6		9.2	53.1	56.0	
9.7	33.5	23.4		9.8	12.1	36.5		8.9	23.6	58.3		9.0	32 14.7	3.3		5.4	56.2	25.2	K
9.4	36.4	15.2		9.5	17.1	47.5		8.5	37.1	7.8	M	10	17.6	28.2		9.3	39 3.4	12.7	
9.6	41.4	12.8		9.3	18.0	21.9		9.3	42.7	55.5		9.3	25.3	39.1		9.5	26.6	25.7	
9.3	42.7	3.6		10	28.0	23.2		9.8	43.2	39.7		10	27.0	14.0		9.5	28.8	10.9	
9.8	49.0	43.0		9.6	29.8	12.2		7.8	45.5	58.2		9.8	34.4	43.1		9.4	35.1	30.4	
10	53.3	5.0		9.8	37.9	20.0		7.4	53.8	33.4	L	9.2	40.3	39.3		9.9	40.4	49.2	
9.5	12 8.4	0.6		8.8	43.6	25.9		8.8	59.4	5.9	M	9.5	41.1	26.6		9.8	42.4	44.3	
9.8	13.5	24.1		8.8	58.3	17.4		10	26 4.4	36.3		9.8	47.1	52.3		9.8	51.3	47.6	
9.5	32.9	38.4		9.8	19 24.5	24.2		9.3	5.6	45.5		9.7	47.4	38.8		9.8	55.9	13.1	
9.5	36.2	53.0		9.6	44.2	5.5		10	6.0	57.7		9.5	58.4	10.4		9.0	56.1	28.8	
9.4	44.8	12.5		9.5	46.6	51.6		9.5	19.5	59.9		9.0	59.5	24.9		9.5	59.1	57.0	
9.1	59.7	57.1		9.5	46.7	37.0		10	21.3	21.5		9.3	33 10.6	23.5		9.5	59.5	2.2	
10	13 6.5	53.7		9.8	49.7	54.4		9.5	22.5	29.4		9.0	22.9	34.7	M	9.5	40 0.9	18.3	
9.8	9.4	26.0		9.6	20 26.8	11.7		9.8	36.1	24.8		9.1	47.0	45.5		9.4	12.9	13.7	
9.7	19.5	29.8		10	28.7	53.4		9.4	38.4	38.0		8.2	48.5	57.6	L	9.8	19.3	38.7	
9.0	19.7	8.5		10	33.8	55.5		9.7	48.6	48.1		9.4	49.4	33.6		10	23.4	53.8	
8.0	25.4	20.0	L	9.0	34.1	3.0		9.7	49.3	5.5		8.2	49.6	22.9	K	9.8	27.6	58.5	
9.8	26.2	52.1		9.2	37.5	35.2		9.5	53.2	51.9		8.8	55.9	35.2	L	10	38.7	59.7	
9.3	39.2	51.0		9.4	47.6	4.4		9.2	53.5	18.8	M	8.7	34 1.2	59.1		9.2	39.1	21.5	
9.5	48.2	34.6		10	59.3	11.5		9.9	27 6.7	42.3		10	8.8	4.6		9.8	47.8	38.2	

2301—2360

m	7h m	s	—6° ′	
9.7	40	48.4	26.8	
9.4		50.7	51.3	
8.9		55.2	57.9	M
9.5	41	2.3	38.0	
7.1		10.0	25.2	B
9.0		14.4	42.5	
9.2		18.1	29.1	
9.5		19.3	26.5	
9.4		22.5	58.9	
9.0		41.4	19.1	
9.8	42	0.7	1.2	
9.4		3.4	13.7	
10		11.5	49.3	
10		12.5	32.5	
9.2		17.5	22.6	Sj
9.5		18.3	11.9	
8.9		24.5	59.8	
9.5		34.4	44.1	
10		42.5	50.6	
9.5		54.1	17.0	
9.8	43	4.7	20.5	
9.4		10.2	57.8	
9.5		18.4	11.4	
9.8		23.6	25.4	
8.9		25.1	29.2	K
8.7		32.5	40.1	K
9.3		34.6	7.8	
9.1		46.7	26.2	
9.6		53.8	23.0	
9.7	44	1.0	53.5	
9.4		1.3	23.5	
9.8		1.4	48.6	
9.4		5.5	57.8	
7.5		26.8	36.6	Sj
9.1		40.4	35.6	M
9.2		58.9	11.2	
9.5		59.3	27.6	
9.1	45	2.6	32.1	
8.1		14.7	26.0	K
8.3		20.7	50.0	M
10		22.0	44.7	
9.5		24.5	26.2	
9.8		35.3	40.8	
9.1		35.4	48.6	
9.8		50.8	9.3	
9.1		54.6	32.4	K
8.9	46	9.9	35.1	K
9.8		14.2	4.0	
9.5		24.3	40.3	
9.4		38.1	4.2	
9.5		48.0	53.9	
9.4		51.8	30.8	
9.5		59.2	32.8	
9.4	47	3.9	48.0	
9.2		6.4	28.0	
9.5		23.8	42.9	
9.0		31.3	7.0	
9.1		32.2	2.8	
9.8	48	3.4	2.5	
9.1		3.4	33.3	M

2361—2420

m	7h m	s	—6° ′	
9.4	48	5.9	25.0	
9.4		8.0	57.4	
9.8		10.3	38.6	
9.5		23.5	23.0	
10		38.4	30.8	
9.4		46.8	4.6	
8.2		47.6	9.0	K
8.5		56.9	3.0	K
9.2		57.3	34.6	
9.8	49	17.0	25.2	
8.9		32.0	1.0	M
9.5		32.2	23.5	
9.4		43.8	43.0	
9.5		54.8	7.5	
9.0	50	0.2	34.4	Sj
9.1		33.4	48.4	
9.8		40.5	23.5	
8.0		41.2	13.0	K
9.7		51.4	30.3	
9.0		56.4	54.5	K
9.4	51	3.2	2.9	
9.4		13.3	14.8	
7.8		17.1	0.5	K
9.4		18.2	3.3	
9.2		19.7	43.4	
9.4		22.6	36.2	
9.8		32.4	55.2	
9.0		48.8	16.8	K
9.3		49.6	18.4	
9.5	52	6.4	22.6	
9.8		7.3	57.3	
9.0		14.5	5.2	Sj
9.5		15.1	13.9	
8.8		19.2	36.3	
9.2		26.9	54.1	
9.8		27.7	50.5	
8.5		28.7	14.0	K
9.6		29.1	57.1	
9.0		32.2	36.8	
8.5		36.9	54.1	Sj
9.4		53.3	12.7	
8.7		58.0	57.5	L
9.5	53	26.2	10.0	
8.2		36.3	41.7	L
9.1		37.7	36.3	
9.4		39.9	58.2	
6.8		57.1	1.1	K
9.5	54	1.4	16.2	
9.5		2.1	33.8	
9.6		5.9	54.3	
9.8		13.4	19.3	
9.4		14.2	28.1	
9.6		20.3	23.5	
9.8		34.7	37.0	
9.7		37.9	10.0	
9.5		59.2	6.3	
9.1	55	4.2	9.7	
9.4		12.6	2.5	
8.5		20.4	17.5	
9.1		21.0	36.4	

2421—2480

m	7h—8h m	s	—6° ′	
9.0	55	33.1	31.0	
9.8		41.4	50.0	
9.0		59.7	0.5	K
9.5	56	10.1	35.6	
9.7		10.6	55.2	
9.5		14.9	50.0	
9.0		28.6	6.1	
9.6		32.9	31.1	
9.0		51.9	53.4	K
10		52.6	29.5	
10		58.8	57.9	
9.9		59.3	55.5	
9.8	57	7.8	8.5	
9.4		8.1	27.5	
9.4		15.3	1.7	
9.2		16.7	22.4	
9.4		20.2	28.6	
9.5		24.2	57.7	
10		38.0	21.5	
8.3		39.5	48.0	Sj
10		44.9	40.6	
9.0		53.3	50.0	M
9.2	58	4.4	15.7	
9.5		14.3	35.2	
9.4		16.2	30.2	
9.8		18.3	31.8	
10		30.9	15.9	
9.8		36.2	18.6	
10		38.9	36.9	
8.6		41.9	2.5	
8.2		42.0	52.3	K
9.0		43.0	57.8	
9.8	59	0.0	24.2	
8.8		10.8	57.6	K
10		22.1	50.1	
9.1		23.6	48.8	
9.0		25.0	7.6	
9.0		26.3	8.2	
9.3		26.9	52.5	M
9.8		32.9	57.5	
9.8		44.6	29.2	
9.1		45.3	33.8	M
9.8		49.0	53.0	
8.8	0	5.3	3.7	
9.8		10.9	44.3	
9.1		12.8	42.9	
9.5		13.6	53.2	
10		16.9	57.9	
9.7		20.4	56.6	
8.7		38.2	53.6	
9.1		51.8	9.6	M
9.8		54.6	58.8	
8.4		54.8	33.8	M
9.5		55.9	16.6	
9.8	1	7.7	1.3	
9.5		12.5	58.5	
9.5		19.3	6.0	
9.8		22.8	4.6	
9.3		43.2	20.9	
9.1		44.7	0.4	

2481—2540

m	8h m	s	—6° ′	
9.5	1	48.8	54.2	
8.7	2	4.9	16.9	L
9.5		13.6	40.0	
9.4		16.5	20.7	
9.5		28.4	17.8	
9.4		29.7	1.7	
8.6		35.9	29.1	K
8.9		37.9	25.5	
7.5	3	0.3	19.3	Sj
10		18.2	2.8	
9.7		23.2	29.1	
9.5		25.3	7.5	
9.5		27.2	1.0	
6.3		52.0	19.4	L
9.7		58.7	28.2	
9.1	4	3.1	55.9	
9.8		9.4	36.1	
8.0		10.3	46.6	M
9.0		17.8	59.3	
9.5		30.3	56.2	
9.5		32.8	10.0	
9.3		42.4	13.1	
9.0		44.2	50.8	M
9.3		51.2	28.5	
9.8		53.6	4.0	
9.0		58.7	1.0	
9.8	5	16.5	19.7	
9.5		20.1	50.2	
8.8		36.8	26.5	Sj
9.2		38.5	29.0	
9.0		42.5	23.5	
9.6		44.4	39.4	M
9.0		44.9	12.7	
8.2		45.3	45.8	K
9.9	6	23.2	57.8	
9.0		24.9	15.7	K
7.1		25.9	9.5	K
8.7		26.7	59.8	Sj
9.4		35.1	52.9	
9.1		38.0	23.2	
8.5		42.8	2.9	K
9.8		47.6	32.5	
8.3		59.0	24.8	L
9.6	7	9.5	44.7	
9.0		25.2	28.5	
9.3		38.6	7.8	
9.5	8	0.5	8.0	
8.1		1.4	28.5	Sj
9.4		22.4	19.9	
9.5		22.5	40.7	
8.7		25.0	40.8	L
9.4		29.5	50.5	
8.2		42.3	53.7	Sj
9.5	9	0.0	23.1	
9.8		1.1	47.7	
9.0		7.5	31.8	
8.8		14.9	44.8	M
10		28.6	53.0	
9.4		33.9	29.9	
9.0		34.1	24.7	

2541—2600

m	8h m	s	—6° ′	
9.3	9	37.3	10.4	
8.9		52.4	35.4	
9.3	10	7.4	41.9	
9.4		26.8	30.9	
9.0		53.5	46.1	M
9.8	11	1.1	28.0	
9.5		11.3	39.8	
9.7		18.4	11.7	
9.4		22.1	8.9	
9.5		38.0	32.6	
9.5		43.8	39.4	
9.5		44.9	57.3	
9.2		46.4	41.5	
8.8		54.3	14.6	K
9.8		56.0	53.5	
8.3	12	30.1	53.3	K
9.5		50.6	48.9	
9.8	13	2.4	13.0	
9.4		2.6	30.8	
7.2		21.8	10.0	K
8.0		26.7	2.9	Sj
9.8		35.5	47.7	
9.0		35.8	50.7	K
9.5		38.4	16.6	
9.5	14	24.5	48.2	
8.5	15	0.4	21.7	
9.3		2.6	4.4	
9.5		3.2	55.5	
9.5		4.4	4.2	
9.5		22.4	42.8	
7.8		41.5	13.4	Sj
9.8	16	4.6	26.3	
9.0		4.9	43.9	
9.3		19.4	24.5	K
9.6		26.5	27.8	
8.5		27.7	23.1	K
8.6		34.1	28.0	K
9.2		35.8	27.3	
8.5		52.5	47.6	K
9.5	17	10.8	11.6	
9.4		12.2	4.7	
9.7		55.8	14.0	
9.6	18	0.8	13.5	
9.2		4.8	15.4	M
8.0		8.9	41.5	Sj
9.4		18.8	16.9	
9.8		42.3	17.7	
9.8		47.7	28.7	
9.8		55.0	26.1	
9.8	19	10.3	58.2	
8.5		14.6	0.3	
9.5		20.1	58.4	
9.5		24.4	45.4	
10		32.5	46.7	
9.5	20	11.2	10.4	
9.2		20.7	5.2	K
9.8		23.3	3.5	
9.8		33.1	55.6	
7.5		39.4	44.7	Sj
9.1		45.0	36.0	

2601—2660

m	8h m	s	—6° ′	
8.8	20	45.5	48.2	
9.1		49.6	24.6	
9.0		58.7	9.5	K
9.0	21	8.3	15.7	K
9.5		10.9	40.9	
8.3		23.6	52.3	K
9.5		34.2	11.4	
10	22	9.7	36.9	
9.8		27.5	54.0	
9.3		44.3	36.1	
9.3		47.0	48.4	
10		48.6	58.0	
9.3		51.1	27.9	
9.4		53.3	46.3	
9.6		54.2	16.1	
9.7		58.6	44.7	
7.4	23	18.0	32.9	L
9.1		19.7	14.3	
9.8		22.6	29.6	
7.8		27.8	40.3	Sj
9.6		36.5	51.3	
9.6	24	0.8	20.5	
9.3		12.1	10.3	
9.8		15.6	52.4	
9.0		27.0	2.4	M
9.4		39.0	54.0	
9.3		41.6	10.9	
8.9		45.3	31.0	
10		58.4	49.3	
8.8	25	16.6	56.7	M
10		20.3	37.5	
9.8		24.7	13.6	
9.5		25.5	37.9	
9.0		47.6	5.6	
9.6	26	4.1	8.4	
8.0		24.6	44.6	Sj
9.6		28.7	17.6	
9.6		43.2	19.9	
8.8		57.1	35.2	
9.4	27	1.9	46.8	
10		4.0	9.9	
8.5		17.5	5.7	K
9.7		22.3	8.0	
9.8		24.2	38.1	
10		47.6	46.6	
9.2		48.8	5.0	K
9.4		59.3	29.6	
8.9	28	8.4	35.8	K
9.1		28.1	28.7	K
9.8		37.0	49.1	
9.4		40.6	56.8	
9.8		53.5	56.1	
9.4		55.1	30.0	
9.1	29	7.6	30.6	K
9.4		19.3	43.1	
10		29.4	45.9	
9.5		33.1	56.3	
8.5		47.7	48.9	K
8.8		49.3	43.8	M
9.2	30	34.8	46.2	

2661—2720

m	8h m	s	—6° ′	
9.8	30	39.5	42.6	
10		39.7	15.2	
9.0		41.8	18.8	K
7.5		44.6	17.9	K
9.3		46.3	32.8	
9.3		49.7	24.4	
8.8		56.5	8.1	L
9.9	31	3.6	46.9	
6.7		10.5	9.3	K
8.5		25.4	54.4	M
7.5		48.6	20.3	K
9.8		56.0	33.2	
9.1	32	1.9	0.2	Sj
9.3		13.8	38.5	
10		18.6	23.3	
9.8		28.1	38.5	
9.7		30.0	39.1	
9.8		40.0	51.9	
9.8		43.1	55.0	
9.8		52.2	32.7	
10		53.2	25.5	
9.8	33	1.4	51.5	
8.7		3.3	50.0	Sj
10		23.7	5.6	
8.5		30.1	11.8	B
8.6		57.5	19.8	M
8.6	34	8.6	0.9	K
9.6		27.2	26.5	
9.8		28.3	27.6	
8.9		29.8	5.6	B
10		42.8	48.0	
9.4		46.2	49.5	
9.4		50.0	37.4	
9.5		55.4	12.9	
9.0	35	8.9	31.9	K
10		13.4	28.7	
9.5		26.9	38.7	
9.4		28.1	13.5	
9.7		32.1	31.2	
8.5		38.5	58.2	Sj
9.8		47.0	38.0	
9.1		59.4	51.0	K
9.0	36	3.6	40.0	
10		11.2	44.5	
8.6		17.2	33.4	K
9.5		25.8	9.3	
8.7		29.1	41.8	K
4.5		33.7	42.8	K
9.4		48.9	1.0	
9.8	37	9.5	23.1	
10		14.4	53.2	
9.8		38.3	12.7	
9.0		46.1	0.5	M
7.2	38	9.4	27.3	K
9.5		38.1	40.8	
9.5		38.5	36.5	
8.4		44.7	26.2	K
9.0		48.4	11.5	
8.3		50.6	0.5	M
9.3	39	31.2	44.1	K

2721—2780

m	8h m	s	—6° ′	′
9.5	39	44.9	16.8	
9.3		48.3	48.3	
8.5		51.3	13.6	K
9.4	40	15.5	30.7	
9.8		23.4	16.4	
9.4		45.0	18.3	M
6.8		55.8	1.1	K
10	41	11.4	13.6	
9.0		12.3	47.1	M
9.3		41.2	43.5	
8.2		58.5	28.2	K
8.5	42	1.8	14.5	K
8.7		7.9	34.4	K
10		16.9	3.5	
9.3		25.0	58.0	M
9.4		42.1	5.1	M
9.7		50.9	32.9	
10		57.0	43.2	
10	43	29.3	30.7	
8.7		39.6	31.4	Sj
9.3	44	3.7	25.9	
9.6		23.1	31.7	
6.3		26.4	38.5	L
8.2		35.3	14.3	K
10		36.4	9.0	
9.3		48.0	48.6	
9.8	45	1.1	36.2	
9.7		12.5	22.3	M
9.7		14.9	46.1	
9.7		18.0	39.5	
9.7		45.4	22.6	
8.8	46	23.2	3.0	
9.9		34.7	6.8	
9.0		42.6	3.5	Sj
9.5		50.4	38.1	
9.0		50.9	58.4	M
9.2		51.0	26.8	
9.8	47	7.3	26.6	
8.9		28.2	49.4	M
9.8		36.3	45.3	
9.8		36.5	36.0	
9.9		48.2	47.8	
9.9	48	2.9	33.7	
9.7		16.1	34.2	
9.4		51.7	57.3	
9.3		52.8	29.0	
9.5	49	5.9	22.8	
9.5		27.6	19.2	
9.5		38.2	15.9	
10		40.5	28.8	
9.8		59.4	18.0	
8.3	50	7.8	11.4	K
9.5		18.7	37.0	
8.0		23.8	50.9	K
10		25.1	40.8	
9.0		26.7	12.4	K
9.3		41.7	48.4	M
8.5		52.4	22.6	K
9.5	51	43.7	45.8	
9.5		51.4	22.8	

2781—2840

m	8h—9h m	s	—6° ′	
8.3	52	54.7	31.4	Sj
9.5	53	14.9	9.8	
9.3		33.0	1.1	
8.5		43.5	50.9	K
9.4	54	0.6	6.4	
10		0.8	54.4	
8.7		9.7	16.0	M
10		18.8	55.8	
9.0		22.3	32.1	K
9.8		25.2	37.9	
9.5		27.6	8.7	
9.8		33.5	47.5	
9.4		39.6	44.4	
9.0		50.5	17.8	M
9.2		51.7	11.7	K
9.7	55	13.3	8.9	
9.1		18.8	56.6	
10		26.1	50.3	
10		44.2	32.7	
9.9		51.2	53.0	
9.1	56	20.5	12.2	
10		40.4	28.9	
9.6		51.0	8.9	
9.5		53.3	6.8	
9.8		59.6	29.6	
9.5	57	4.6	29.3	
9.2		24.6	49.4	
9.8		42.1	47.6	
9.8		43.7	50.7	
9.8		44.9	41.8	
10		53.2	3.1	
10	58	3.2	24.0	
10		3.6	38.2	
9.6		15.9	34.9	
9.5		28.1	15.8	
9.6		45.6	49.1	
8.3	59	22.6	40.1	Sj
9.9		24.3	55.0	
10		39.7	4.0	
9.5		42.6	48.9	
9.0		48.3	57.1	K
9.5	0	24.9	36.6	
9.6		39.7	6.1	
9.4		42.2	31.8	
8.3		42.9	33.3	L
9.3	1	12.0	45.9	M
9.1		52.8	16.8	
10	2	13.2	19.2	
10		47.6	55.2	
9.1	3	19.9	36.9	M
9.8		21.5	54.1	
9.9		24.9	46.6	
9.4	4	1.3	11.5	
9.4		5.3	9.9	
10		11.4	14.6	
9.5		17.3	59.0	
9.4		18.4	20.6	
10		34.7	2.1	
8.0		41.4	23.0	K
9.0		53.4	20.7	K

2841—2900

m	9h m	s	—6° ′	
9.0	5	2.2	53.1	
8.9		11.4	33.4	
9.0		13.5	12.0	K
7.7		15.0	20.2	K
6.3		16.3	30.9	K
10		19.7	20.1	
10		23.1	9.4	
9.6		26.1	17.0	
9.4		48.4	3.0	
8.5		53.8	57.3	K
10	6	25.9	1.6	
9.3		26.1	24.7	
9.6		28.9	3.0	
9.1		38.0	44.4	
8.5		42.0	15.7	Sj
9.7		43.6	55.4	
9.1	7	26.8	11.9	K
9.1		41.4	3.0	K
9.6		41.4	44.7	
9.0		46.3	25.7	
9.5		50.1	30.6	
8.3	8	11.2	20.4	M
9.3		25.7	35.2	
9.7		39.7	44.0	
9.5		45.5	25.7	
9.5		46.3	48.8	
10		52.9	2.5	
9.4	9	0.9	2.9	M
9.2		11.2	20.4	Sj
9.9		24.0	59.0	
9.4		26.3	42.7	
8.5		31.5	6.7	K
9.9		50.0	10.0	
9.5	10	0.0	6.4	K
8.7		26.5	51.7	K
9.5		36.4	29.1	
9.0		59.8	52.2	K
9.6	11	1.7	27.2	
9.7		5.1	33.5	
9.3		6.5	47.5	M
9.8		9.0	31.2	
9.4		19.2	36.3	M
9.5		45.1	22.7	
10	12	29.3	28.1	
9.7	13	13.3	59.5	
9.8		14.3	52.3	
9.5		29.8	0.9	
9.8		44.8	35.7	
9.5		46.3	3.1	
9.8		46.5	33.3	
8.5	14	10.8	3.8	K
9.7		41.2	38.4	
10		54.3	44.0	
9.6	15	14.4	18.9	
9.8		56.5	53.5	
9.8	16	42.6	20.6	
9.8		46.8	55.5	
9.9	17	2.9	59.7	
8.0		18.5	16.2	M
10		28.8	12.8	

2901—2960				2961—3020				3021—3080				3081—3140				3141—3200			
	9h	—6°			9h	—6°			9h—10h	—6°			10h	—6°			10h	—6°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.3	17 37.5	13.9	M	9.3	30 54.0	20.1		9.8	46 5.2	56.9		10	1 34.4	25.9		9.2	17 22.0	59.2	
9.5	48.7	44.5		9.7	31 20.3	37.1		10	20.7	49.6		9.1	35.7	54.7	M	9.8	27.7	29.2	
9.4	18 40.4	51.0		9.4	39.8	51.4	M	10	21.5	20.5		9.8	44.1	31.8		10	44.3	30.7	
9.2	50.4	51.2	M	10	45.7	12.0		9.6	22.1	2.6		9.3	2 3.4	40.4		10	54.0	58.0	
9.0	51.8	3.2		10	47.7	57.1		10	39.0	39.4		10	5.2	8.2		9.8	18 18.8	3.7	
10	19 2.7	34.0		9.8	32 2.9	26.3		9.8	47 41.4	17.7		9.5	18.3	37.3		6.0	29.1	19.5	K
9.4	15.3	8.1		9.5	18.8	59.3		9.0	46.6	47.0		9.8	24.5	44.9		10	33.1	47.7	
9.5	19.4	58.5		9.1	21.2	45.3	M	9.0	48 1.3	23.4		10	28.2	12.6		9.5	38.2	6.1	
9.5	42.7	44.6		9.4	32.1	1.8		9.5	2.9	18.0		10	3 30.9	14.1		10	38.5	19.2	
9.2	46.3	2.5		9.8	44.6	2.8		9.8	49.4	12.4		10	50.8	18.2		9.8	41.1	47.0	
10	47.6	11.2		9.0	47.2	7.8	K	9.4	53.4	17.4		9.5	54.7	58.8		9.3	48.6	54.3	
9.0	49.2	52.8	K	9.4	54.9	31.9		9.3	54.7	18.9		8.0	56.3	19.9	K	9.8	19 24.0	25.2	
9.0	20 11.8	1.4		9.5	33 12.1	26.8		6.8	55.8	57.6	K	9.2	4 1.1	7.7		9.7	35.3	32.0	
10	28.7	8.3		7.8	28.8	14.0	Sj	9.5	49 3.6	44.1		9.3	1.3	31.5		9.4	38.1	54.4	
9.3	34.7	32.8		8.2	34 0.9	58.7	K	9.2	5.3	26.9		10	2.7	13.2		9.1	54.6	54.6	
9.7	37.1	30.4		10	12.8	59.9		9.3	7.2	35.9		7.2	3.5	36.2	K	9.8	59.5	53.0	
8.8	40.2	43.6	K	8.6	37.0	6.2		9.7	41.6	34.8		9.3	32.2	9.0		9.5	20 4.7	41.9	
9.8	21 2.9	13.8		9.1	37.1	43.9	M	9.4	50.9	19.6		10	37.8	18.6		9.9	8.0	28.2	
9.5	16.5	2.0		9.2	49.0	38.1	M	9.8	55.8	3.7		9.3	47.6	31.8		9.9	35.9	7.8	
9.1	50.0	34.8		9.8	50.9	3.0		8.9	50 3.5	41.2	Sj	9.5	51.8	17.9		10	36.8	16.2	
9.3	52.0	55.2		10	35 7.4	41.0		9.2	19.2	49.8		10	58.3	2.4		9.5	45.2	36.5	
9.4	55.2	41.6		10	20.4	41.1		9.5	31.7	3.0		9.2	5 10.0	34.4		10	48.2	35.6	
8.2	22 21.4	51.9	K	9.2	22.9	24.5	M	10	51 1.6	51.4		10	33.8	22.7		9.7	21 1.4	5.8	
10	35.0	18.5		9.2	52.1	29.3	M	9.4	8.8	58.6		10	49.8	21.1		10	1.7	9.7	
9.3	55.7	40.8	M	8.3	36 11.8	10.4	Sj	8.7	18.4	30.1	L	8.0	6 7.7	16.5	K	9.6	43.5	7.7	
10	23 22.3	8.5		9.7	23.9	18.1		9.7	24.5	17.2		9.5	12.2	34.6		9.5	22 14.1	52.3	
10	24.3	57.3		9.2	45.9	58.7	M	9.4	29.3	14.4		9.8	12.4	45.5		9.8	21.6	4.3	
8.5	45.2	2.9	M	9.5	37 10.5	48.4		10	51.4	37.5		9.8	16.7	19.2		9.7	22.9	31.2	
9.5	59.9	27.7		8.0	39.6	2.4	K	9.2	57.8	13.0		7.3	31.6	40.3	K	9.8	50.0	20.1	
9.7	24 8.1	27.4		9.8	38 26.7	4.5		9.4	52 16.7	56.0		9.1	52.7	34.4		9.8	51.5	52.0	
9.1	20.2	47.6	M	9.5	30.1	57.3		10	26.8	12.5		9.4	59.6	59.8		9.2	23 40.4	52.9	
10	21.7	54.6		9.4	31.5	42.9		9.7	26.9	31.5		10	7 2.3	27.2		8.5	42.0	15.6	K
7.8	37.4	51.7	K	9.4	39 14.2	38.7		9.4	45.7	11.8		9.5	8.9	29.7		6.0	43.5	53.8	Sj
9.5	39.9	54.7		9.9	16.9	44.7		8.3	59.2	0.4	K	10	14.0	22.7		9.6	53.1	59.2	
9.8	56.3	26.2		10	22.9	8.5		8.8	53 8.7	49.6	M	9.7	27.7	29.7		9.8	54.0	24.0	
9.6	25 23.4	50.5		9.1	28.8	16.3		8.3	30.4	24.5	Sj	9.0	31.2	30.2		9.8	55.5	21.4	
10	43.8	56.3		8.5	34.1	28.0	Sj	8.8	35.7	0.5	K	8.8	8 6.2	28.0	Sj	9.5	24 11.3	32.0	
9.2	53.5	28.5		9.5	48.7	37.5		9.3	48.8	9.4		9.3	52.7	31.3		9.2	50.3	26.3	
6.8	26 8.9	32.8	Sj	9.1	40 13.1	48.1	K	8.9	54 9.0	27.2	K	9.7	9 15.6	53.7		9.8	25 13.6	41.3	
9.0	34.0	39.3		9.5	15.5	44.1		9.0	55 12.4	23.6		9.4	16.3	23.0		9.1	19.1	6.6	
10	48.6	32.0		10	16.7	12.1		9.2	33.2	54.7		8.8	10 3.1	10.0		9.1	23.6	8.4	Sj
10	49.4	20.6		9.5	37.5	52.0		8.8	46.3	8.9		9.3	27.7	38.1		9.8	43.4	51.9	
9.1	27 2.0	24.4		7.2	59.8	34.7	K	9.9	57.9	16.2		9.0	41.3	11.1		9.8	45.0	46.7	
9.1	14.8	13.0		10	41 5.3	40.3		9.6	56 31.2	13.1		9.8	53.0	1.0		9.5	56.0	21.8	
8.3	40.8	53.2	K	8.1	20.4	39.0	K	9.4	32.8	49.4	M	8.8	11 21.4	46.7	Sj	9.2	26 1.2	28.6	M
9.4	54.5	29.6	M	10	26.9	9.2		8.9	42.7	58.1	M	9.8	57.2	26.0		9.5	18.0	52.5	
8.7	58.0	26.4	K	9.5	28.4	55.3		9.3	57 4.4	17.8		9.3	13 6.1	13.9		9.3	27.4	20.9	
10	28 18.3	16.8		9.6	30.9	55.6		7.5	11.7	30.8	K	9.4	15.2	16.8		9.4	32.9	25.6	
10	18.7	56.3		9.0	42 23.9	10.7		10	13.8	13.9		8.8	19.1	16.8	K	9.6	28 15.3	56.0	
9.0	25.2	9.1	M	8.9	27.0	39.5	K	10	41.0	31.1		9.5	14 5.5	4.6		10	21.8	38.8	
9.5	33.3	13.1		9.1	59.8	9.4		10	58 31.9	9.7		9.8	22.4	4.2		9.8	27.0	14.6	
9.0	29 1.7	46.4	K	8.9	43 13.3	0.7		9.3	43.3	20.7		9.5	45.7	23.1		9.2	33.9	40.6	
9.5	22.4	16.3		7.5	29.4	42.4	Sj	9.4	59 6.0	44.6		9.4	15 11.2	26.1		9.6	29 0.2	35.2	
10	26.2	3.3		9.0	58.3	18.3		9.3	33.3	37.7		8.4	30.7	1.2	K	8.3	30.0	8.2	K
9.1	34.3	53.3	M	9.4	44 8.4	54.2		9.8	59.1	21.7		9.1	35.1	40.6		9.6	46.0	52.3	
8.3	39.1	23.5	Sj	8.3	45 8.4	55.1	K	9.1	0 5.5	30.2		9.3	16 3.6	30.2		9.5	47.5	40.4	
9.5	30 8.5	24.6		9.3	10.8	48.5		10	16.8	16.1		9.6	5.2	23.5		9.8	59.3	30.9	
9.5	51.4	54.9	M	9.4	18.5	22.0		6.8	32.1	55.3	K	9.3	15.3	21.0		9.4	30 23.4	58.0	
9.1	51.9	57.6	M	9.9	35.9	6.6		9.5	1 9.0	13.5		8.7	38.7	31.4	K	9.8	31 1.4	52.2	
9.9	52.2	9.1		8.8	52.0	39.7	Sj	9.4	25.9	32.9		7.8	17 9.6	51.2	K	9.4	3.9	19.1	

3201—3260					3261—3320					3321—3380					3381—3440					3441—3500				
	10h		—6°			10h—11h		—6°			11h		—6°			11h		—6°			11h		—6°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.1	31	15.8	25.8	K	9.8	47	6.1	59.5		8.8	4	6.6	0.0	M	9.5	19	32.9	28.5		9.5	38	20.9	28.2	
9.6		19.0	1.0		9.8		9.9	29.2		9.8		8.6	3.1		9.5		53.0	54.7		9.5		21.7	26.8	
9.7		25.9	37.4		9.4	48	0.3	6.5		9.3		9.6	4.7		10	20	4.6	18.1		8.4		45.9	57.7	K
8.9		51.4	49.5		8.4		2.6	49.4	M	9.0		30.5	36.8		9.4		9.9	5.1	M	9.8		46.1	29.6	
9.8	33	29.8	57.6		8.5		3.4	3.4	K	9.0		56.7	50.7		9.5		36.7	2.5		9.8	39	18.6	7.6	
9.4		50.1	32.0		8.5		4.8	11.5	L	8.8	5	32.0	8.7	K	9.5		44.4	56.4		9.3	40	16.8	55.1	
9.8	34	6.4	53.5		10		25.7	42.8		9.3		41.3	41.7		8.4		48.5	30.3	K	9.7		19.4	50.0	
9.7		27.1	51.5		10	49	4.8	3.7		8.9		42.0	28.2	M	9.1	21	14.7	4.3		9.0		22.0	12.0	
10		27.3	20.6		10		20.7	42.2		9.2		55.7	24.9		10		16.5	47.2		9.8		54.5	42.8	
9.1		31.9	48.8	K	10		41.7	44.4		10	6	8.6	37.2		9.8		27.2	25.8		9.2	41	13.4	16.6	
9.9		32.1	45.9		10	50	7.2	43.5		9.0		39.0	37.9	K	9.4		56.5	31.0		9.8		13.8	50.7	
10		36.8	42.8		10		36.2	28.5		9.5		59.7	25.2		9.3	22	6.2	39.3		9.1		14.9	14.8	
9.4		57.0	3.4		9.4		45.0	33.0		9.1	7	0.9	44.6		10		13.3	32.0		9.3		43.0	37.7	
9.5	35	14.8	26.2		8.7	51	11.1	16.8		10		45.8	55.9		9.4		23.6	6.2		9.8		46.9	46.7	
9.4		28.5	43.9		10		25.1	58.9		8.8		56.4	25.2	M	8.9		40.7	2.2	K	6.8		46.9	33.4	B
9.3		39.5	1.8	M	9.4		52.7	38.8		8.9	8	1.4	13.6	K	9.0	23	24.5	21.1	K	7.5		51.4	5.3	Sj
9.1		43.9	7.0	K	9.7	52	1.6	47.1		10		32.0	11.4		10		54.5	17.8		9.2	42	14.9	36.6	M
9.6	36	7.8	46.1		8.8		6.5	34.1		9.3		43.4	42.0		9.1	24	11.0	12.4		8.7		28.7	47.1	M
10		49.8	15.2		9.8		8.7	42.7		9.8		44.8	23.0		9.8		17.4	29.5		9.8		38.0	25.6	
10		52.3	16.3		9.4		22.8	2.5		9.2		57.9	21.0	K	9.5		38.2	42.2		8.0		55.0	34.4	K
9.1	37	3.3	58.8		8.3		26.0	48.0	Sj	10	9	0.5	54.9		8.7		44.9	49.1	K	9.1	43	8.8	41.7	M
9.8		5.5	25.5		9.3		44.1	11.0		9.6		6.5	0.8		9.8	25	11.5	57.9		9.8		14.7	4.6	
9.7		6.2	20.0		9.8		49.7	11.6		9.3		31.4	38.6		9.1		13.0	6.8	M	9.3		28.7	54.2	
9.5		11.0	27.3		9.5	53	11.6	4.2		6.5		37.8	20.7	K	9.0		26.1	36.2	M	9.6	44	1.4	55.8	
9.9		51.4	49.1		9.3		29.2	25.2		9.2		42.1	20.9	K	10		43.4	58.2		9.8		1.5	54.2	
9.7	38	15.3	34.0		9.8		33.1	22.4		9.2	10	17.3	25.4		9.3	26	1.6	25.6		9.0		22.5	47.1	K
8.5		17.8	48.8	Sj	9.0		51.5	55.6		9.8		47.9	43.1		10		8.7	56.0		8.9		39.1	4.1	L
10		51.8	22.1		9.5		52.6	44.2		9.1	11	2.3	55.8		9.7		24.9	58.9		9.6		50.3	38.5	
9.8	40	12.2	58.5		8.9	54	16.2	12.1		9.5		2.8	23.5		9.5		36.0	46.4		9.2	45	20.3	47.5	K
9.0		22.0	3.3		9.3		19.1	47.7		8.7		5.8	56.2	L	9.8		45.4	32.2		10		36.1	20.9	
9.8		25.7	28.3		9.6		43.6	36.3		10		11.1	28.8		9.7		58.7	17.9		9.4	46	1.2	44.4	
8.8		39.4	39.2	M	9.7	55	0.8	29.1		8.4		23.9	7.2	K	9.8	27	10.2	47.7		9.6		11.7	2.9	
8.7	41	37.4	24.8	K	9.4		1.2	1.9		10		39.6	31.9		10		21.6	21.7		10		25.3	37.5	
9.9		45.4	5.4		9.8		42.5	48.2		10		41.8	54.2		9.7		31.1	51.0		8.8		47.2	41.3	K
8.8	42	15.5	0.2		9.1		45.5	26.6	M	8.3	12	1.4	47.0	K	9.2	28	12.2	7.6		8.3		50.1	34.8	K
9.8		15.7	56.6		10	56	8.6	47.7		8.3		22.9	6.3	K	9.5		18.1	38.8		9.4		51.1	8.2	
7.8		41.8	42.9	K	9.6		11.2	27.2		9.7		37.3	54.5		9.3		38.8	47.8		9.4	47	55.8	30.7	
9.8	43	11.7	58.1		9.6		13.9	32.7		9.6	13	18.9	35.6		9.8	29	3.0	53.9		9.1		56.0	25.5	
8.8		16.9	0.2	M	9.2		30.2	2.9		8.7		44.9	5.6	L	9.6		26.2	35.7		9.1	48	50.6	19.7	M
9.8		23.3	9.8		7.2		30.3	54.1	K	9.8		58.2	55.0		9.0		36.7	0.9	M	10	49	23.5	16.3	
10		25.9	36.4		9.2		46.1	36.8		10		58.5	28.8		9.8		51.0	52.2		9.1		50.1	10.6	M
9.1		26.2	20.5		9.8	57	11.2	2.4		9.5	14	6.5	4.8		7.8	31	26.6	48.1	K	9.6		57.2	51.1	
9.8		47.2	55.9		9.7		33.9	26.1		9.0		27.8	15.4	M	9.5		38.1	15.5		10		58.8	20.7	
9.8	44	5.7	24.1		9.4		36.0	45.9		10		39.8	43.5		9.3		42.0	59.7		9.8	50	20.7	8.4	
9.5		7.3	48.1		7.7	58	46.1	13.5	K	9.7		40.5	46.6		9.0		56.7	14.3		9.0		40.3	9.9	
9.1		35.2	24.5		9.8		47.5	25.3		9.4		55.9	9.4		9.0		58.2	36.5	M	9.1		48.2	26.5	
8.5		36.3	25.2	L	9.3		49.5	33.8	M	9.3	15	21.9	7.0		9.1	32	13.5	50.7		9.0	51	1.4	49.3	
9.7		54.0	25.2		9.8	59	35.6	43.4		9.4		24.9	39.0		9.3		28.6	42.9		9.3		35.7	48.2	
10		54.8	49.4		9.6		57.9	6.3		9.8		37.3	25.5		9.7		51.0	27.3		9.2	52	9.1	9.6	
8.2	45	22.8	13.4	K	8.3	0	9.7	1.6	K	8.4	16	30.0	21.0	K	9.0	33	7.7	37.4		10		17.1	3.0	
10		26.7	53.4		9.4		53.0	49.0		9.7		31.7	51.3		9.6		47.1	48.1		9.5		20.2	24.1	
7.2		31.8	2.7	K	9.8	1	11.6	34.7		9.7	17	28.2	8.4		9.4	34	6.8	32.0		8.3		29.7	49.8	K
10		37.4	29.5		9.5		17.5	11.1		9.1		55.5	23.3		8.2		20.0	25.1	L	8.8	53	24.0	14.8	
9.5		41.3	2.9		9.0		49.6	5.5		9.7	18	2.7	2.8		8.5		29.6	8.3	K	9.5	54	4.1	0.6	
9.5		58.2	37.3		9.8		59.6	1.7		9.3		21.9	27.3	M	9.0		45.9	56.0	M	10		28.0	19.1	
9.2	46	5.6	57.6		9.5	2	55.4	31.4		10		25.8	18.3		9.2	35	2.3	49.2	M	9.0		51.5	11.9	
9.2		18.7	56.5		7.0		56.1	36.0	Sj	9.1		39.4	24.9	M	9.3		18.0	47.9		8.6		58.6	30.1	M
10		38.3	7.4		9.8	3	7.3	52.5		9.5		42.0	54.1		9.8	36	12.2	5.0		9.5	55	25.3	37.4	
10		38.6	49.8		9.3		30.9	0.4		9.0		43.1	43.4	K	9.8		24.5	45.3		6.3		26.7	52.5	Sj
10		49.3	36.6		9.5		38.9	6.6		8.2	19	27.5	59.8	K	9.2	37	52.1	2.6		10	56	21.0	54.1	

3501—3560					3561—3620					3621—3680					3681—3740					3741—3800				
	11h—12h		—6°			12h		—6°			12h		—6°			12h—13h		—6°			13h		—6°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.9	56	26.0	7.5		9.3	16	17.5	31.0		10	33	16.2	17.7		8.3	46	55.6	49.3	K	9.5	0	55.5	48.6	
9.5		35.1	47.3		9.4		31.5	42.2		9.0		27.8	23.0		10	47	5.2	1.5		8.2		56.0	32.1	K
9.4		51.5	8.0		9.5	17	16.5	39.1		9.5		32.7	58.1		9.5		15.0	22.5		9.5	1	0.7	23.3	
9.6	57	0.2	2.1		9.0		41.4	45.3		9.0		54.5	35.2	K	9.3		15.1	50.8		9.5		6.9	44.0	
9.1	58	37.5	30.9		8.8	18	8.2	48.9		9.2	34	1.2	48.9		9.0		16.0	49.3	K	9.0		13.7	16.4	
10	59	32.7	53.1		9.4		10.7	29.0		7.0		28.3	42.1	K	9.4		33.0	48.6		9.5		18.4	0.9	
10		33.5	56.8		9.1		19.2	11.2		9.2		56.2	48.8		9.5		38.5	58.2		9.1	2	1.0	26.3	M
9.0		57.0	43.2	Sj	9.6		26.3	31.0		9.1	35	9.1	25.2		8.9	48	2.2	26.3		9.5		7.6	36.0	
8.6	1	8.6	2.6	K	10		45.6	4.1		10		15.4	14.0		9.1		28.1	8.5		9.4		11.3	38.7	
9.9		18.1	7.8		8.0		51.4	31.3	K	9.2		20.4	13.6		9.5		34.9	17.5		7.2		13.5	52.7	K
9.6		33.2	35.0		8.8	19	20.9	55.1		9.3		24.5	11.6		8.8		40.9	28.6	K	10		16.9	15.0	
9.4		36.8	46.5		9.5		30.0	21.3		9.1		32.7	58.3		9.1		46.5	37.2	K	9.2		37.7	20.9	
9.3		56.0	4.1		9.8	20	6.4	11.7		9.9		53.6	44.6		9.4		52.6	43.6		10	3	14.6	23.0	
9.5		56.3	50.3		9.0		13.4	46.7	WC	9.8	36	26.1	16.0		9.4		57.3	24.1		9.7		33.5	40.7	
9.4		58.6	18.2		9.3		22.7	12.5		9.5		32.7	58.2		10	49	24.2	51.5		9.8		36.8	50.2	
9.4	2	14.6	13.0		9.1		30.9	55.0		9.1		33.0	28.5	K	9.8		34.8	58.8		8.8		42.3	54.3	K
8.7		47.9	14.7	K	8.4		32.4	45.8	K	9.5	37	36.2	56.6		10		40.0	15.3		9.2		43.5	1.9	
6.4	3	0.8	57.9	Sj	8.9		36.7	7.1	M	8.9		38.5	9.3	M	9.5	50	4.4	17.0		9.2	4	6.2	37.3	
9.1		22.0	45.8		9.1	21	6.8	33.0		9.6	38	1.0	27.2		9.5		11.4	6.9		10		9.9	3.9	
9.9		39.3	31.8		9.6		21.1	43.0		10		34.8	51.0		9.5		15.0	59.3		8.5		13.3	16.6	L
9.2	4	11.5	48.1		9.4		41.9	2.5		9.7		37.2	37.6		8.0		23.9	21.5	K	10		16.4	12.0	
9.4		34.6	5.0	M	9.9	22	27.0	20.7		9.3		54.8	31.2		9.1		41.9	51.9		9.3		39.6	7.0	
9.5		40.2	31.7		8.5		37.9	11.2	K	9.4	39	29.2	39.6		9.3		45.9	52.3		9.5		50.6	29.3	
8.6		48.2	11.6	K	9.0		41.8	4.7	K	7.8		29.9	59.9	K	9.2		51.1	32.8		9.5	5	0.5	4.8	
9.8		52.1	20.7		9.4	23	6.6	35.1		9.5		38.0	1.5		7.0	51	5.1	9.8	K	8.9		10.3	51.7	
9.8		56.3	8.9		9.4		18.0	27.7	M	9.5		55.0	30.9		9.5		12.4	17.7		9.2		54.7	57.7	
10	5	3.2	48.1		9.0		48.8	51.8	K	10		55.8	48.9		9.1		35.5	32.2		9.2		54.7	47.4	
8.8		49.6	54.4	Sj	9.5	25	5.3	30.3		9.8		57.2	51.2		9.3		39.9	20.1		9.2	6	3.3	45.8	
9.9	6	28.0	24.9		8.7		43.7	28.0	K	9.3	40	9.7	20.6		9.5		41.9	58.2		8.5		15.9	9.1	Sj
9.9		28.9	29.2		9.5	26	13.2	32.4		9.2		11.4	22.4		9.1		46.8	19.9		9.2		43.4	2.7	
9.2		57.1	57.5		9.5		19.5	45.9		9.8		33.6	45.2		9.8		55.6	11.2		9.5		44.1	52.3	
7.4	7	42.0	27.0	K	10		49.4	20.1		9.4		50.8	33.4		10	52	37.5	56.5		9.5	7	24.8	10.3	
9.5		43.0	28.4		9.4		59.3	24.1		9.7	41	37.0	18.0		9.3	53	11.7	58.3		8.9	8	28.7	57.2	
9.9		43.4	38.0		9.5	27	20.3	17.6		9.5		40.4	13.3		8.8		24.3	32.5	K	10	9	1.7	20.4	
10		56.5	19.3		9.7		29.1	14.3		9.4		52.6	39.8		9.8		32.9	5.5		10		15.9	23.9	
9.5		57.3	10.8		9.3		38.3	56.7		7.5	42	13.6	4.9	K	9.8		39.5	6.1		7.4		16.1	10.0	K
8.8	8	39.2	39.7	K	9.5	28	3.3	24.1		9.2		24.8	16.0		9.5	54	4.5	11.2		9.4		21.2	36.1	
8.3		55.6	43.5	Sj	8.0		15.4	38.8	K	8.3		31.1	23.8	K	9.5		10.5	52.5		9.2		25.6	31.5	
9.2	9	10.5	2.1		9.5		26.8	56.3		7.0		36.7	50.3	L	9.3		52.3	0.1		9.5		44.9	9.3	
9.5		14.1	49.1		9.2		30.7	4.7		9.2		54.4	34.2		9.5	55	0.0	29.3		9.5		48.8	18.5	
8.8		35.6	30.4		9.5		40.0	15.6		9.0	43	0.1	37.9	K	8.9		14.1	7.0		10	11	6.1	11.9	
9.5	10	11.5	44.9		10	29	2.4	43.5		8.7		11.1	50.5	L	9.5		27.1	29.5		10		34.0	45.2	
8.8		16.1	45.8		9.2		7.6	27.8		9.0		28.3	16.1		9.6		32.4	57.3		9.5		45.3	43.8	
9.5		34.5	33.5		9.1		20.2	57.1		10		40.4	31.3		9.3		49.4	33.6		8.8		52.3	17.7	
10	11	43.0	52.9		9.4		25.0	41.6		8.8		43.9	9.2		9.5		51.7	30.7		9.7	12	24.9	58.7	
9.2		53.4	35.6		10		34.9	44.8		9.5		53.5	52.0		9.5	56	22.7	30.7		9.8		30.4	23.3	
8.5	12	40.6	16.0	L	9.8		39.9	8.0		9.5		53.7	31.4		10		40.9	28.8		9.6		36.6	14.6	
8.7		59.0	48.7	K	9.8		43.1	31.9		9.5		53.8	6.5		9.4		53.1	6.4		8.8	13	0.8	43.3	
10	13	55.0	58.9		9.7	30	17.8	55.0		9.0	44	9.1	41.5	K	9.8	57	21.7	23.8		9.5		11.0	24.1	
9.3		57.2	27.3		9.5		30.0	41.6		9.4		31.4	17.0		9.5		57.5	9.9		9.6		36.3	31.3	
9.4	14	9.5	40.3		9.5		33.0	13.4		9.4		53.9	29.4		8.5	58	9.5	22.6		9.4		39.9	4.0	
9.1		10.1	34.9		9.0		40.5	15.5		10		57.3	40.5		8.3		17.8	52.9		9.4		44.4	4.5	
9.4		31.5	54.7		9.8		44.9	47.5		9.1	45	21.5	4.8		8.8		27.7	31.1	K	9.2		46.3	56.5	
9.7		41.9	4.6		9.5		46.8	11.3		8.8		27.1	20.2	K	9.5		37.4	35.8		9.8	14	8.9	4.0	
8.8		48.6	16.0	M	9.5	31	56.1	9.5		10		42.2	3.4		9.0	59	17.4	30.7	K	8.8		16.4	59.0	Sj
10		56.5	8.6		9.4		58.1	33.4		9.4		45.6	42.1		9.4		23.3	21.2		8.3		48.2	46.8	K
6.8	15	41.8	29.6	K	8.6	32	0.7	8.0	K	9.6		56.8	11.4		9.2		26.6	25.1		9.3	15	5.4	46.5	
9.0		55.5	0.6		9.5		3.1	33.6		10	46	3.7	47.1		9.5		35.9	11.9		9.9		21.5	41.8	
8.8		56.7	14.4	M	9.4		23.3	19.7		9.0		22.2	16.1		9.7		40.7	30.6		10		30.5	13.6	
9.5	16	15.4	24.9		8.8		37.5	15.6		9.2		28.0	2.5		9.3	0	10.3	55.7		9.6		40.7	47.7	

3801–3860				3861–3920				3921–3980				3981–4040				4041–4100			
	13h	–6°			13h	–6°			13h–14h	–6°			14h	–6°			14h	–6°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
10	15 55.7	8.9		9.5	32 15.4	8.8		7.5	55 41.0	26.3	K	9.0	14 10.5	5.5	K	7.8	30 55.3	31.8	Sj
9.5	56.3	57.7		9.8	28.6	38.8		9.9	43.2	58.9		9.5	21.6	51.3		9.8	31 7.0	29.2	
10	16 4.9	18.0		9.5	33 1.4	5.7		9.6	51.7	0.3		8.7	50.6	56.7	K	9.4	14.3	8.2	
9.3	5.4	50.3		9.5	5.5	1.9		8.8	56 26.7	38.8	M	9.7	15 1.2	54.0		9.6	25.6	26.3	
10	20.8	24.7		9.5	20.4	2.2		8.8	31.2	5.4		10	13.7	58.0		9.3	31.0	38.5	
10	31.1	22.7		9.8	20.4	39.0		9.5	52.8	54.1		9.8	15.6	25.7		9.1	40.1	54.8	K
8.0	17 15.3	5.0	K	9.5	23.1	37.0		9.5	57 1.5	52.5		9.7	57.5	48.2		9.8	32 21.8	34.6	
9.0	28.4	20.2	Sj	8.0	34 12.5	48.8	K	9.7	16.0	46.2		10	59.4	34.0		8.3	25.3	18.8	Sj
9.5	29.0	56.2		9.4	16.5	52.8		8.2	22.6	11.0	B	9.4	16 18.2	32.7		9.0	33.6	53.9	K
9.1	30.1	24.0		8.3	27.4	13.6	Sj	7.9	36.0	34.9	M	8.8	29.4	24.8	M	9.0	33 4.1	52.1	M
8.2	46.8	49.4	K	9.7	40.5	54.0		9.5	47.5	23.7		8.8	52.5	4.0	K	9.5	5.1	9.6	
10	56.7	1.6		9.7	35 10.0	57.7		10	58 11.7	40.0		9.5	17 2.5	9.0	K	9.7	25.0	53.1	
9.4	18 14.2	10.4		9.3	22.6	34.3	K	8.8	30.1	52.9	Sj	8.5	7.7	30.8	K	9.8	38.2	49.6	
9.5	21.3	2.4		9.4	28.3	35.0	K	10	43.2	44.0		10	19.8	14.5		9.5	59.1	39.0	
9.2	39.0	0.8		8.2	36 0.0	41.6	K	9.5	59 15.7	11.4		9.3	29.9	56.0		8.8	34 17.8	14.0	Sj
9.2	44.5	20.5		9.1	7.0	38.7	K	9.2	38.2	55.3		9.5	51.4	57.3		9.6	35 17.8	21.1	
9.2	19 38.9	27.7		9.8	37 20.5	42.8		9.5	52.2	53.6		9.7	53.4	56.4		8.5	17.8	11.0	Sj
9.9	20 2.9	5.8		6.8	21.4	54.2	Sj	9.2	0 4.6	15.3		9.6	18 23.2	48.7		9.6	41.0	33.5	
8.0	9.6	3.6	Sj	9.7	26.6	5.6		9.8	1 9.2	56.5		10	25.6	50.4		9.8	44.5	8.0	
9.1	28.3	16.4		9.5	38 22.9	58.7		9.8	12.0	7.0		8.5	41.5	40.2	Sj	8.2	36 11.7	3.9	M
9.0	45.6	54.8		9.5	47.3	24.1		9.3	34.6	7.5	WC	9.5	48.0	58.8		9.5	39.8	4.9	
9.3	21 20.1	16.5		9.9	39 33.5	42.2		10	36.7	38.1		9.5	50.4	7.9		9.5	37 0.0	52.3	
9.8	40.4	7.3		9.4	47.9	19.2		9.0	2 2.3	41.5	K	9.5	59.8	28.6		9.2	1.3	34.9	
9.5	22 12.0	17.2		9.2	55.4	56.1		8.8	20.3	28.4	Sj	9.1	19 0.6	12.5		9.5	21.0	59.0	
9.1	17.1	49.9		9.9	40 16.5	4.1		9.1	29.2	40.8	K	10	5.5	40.2		9.3	25.2	52.0	
10	47.7	52.8		9.0	36.6	31.0		9.7	40.1	11.6		9.8	28.8	47.9		8.9	31.1	16.7	Sj
8.7	48.6	57.1	Sj	6.5	42.9	6.8	K	9.3	3 5.7	42.0		9.4	38.8	29.2		8.1	37.0	34.4	K
10	23 23.0	11.4		9.8	41 4.0	47.1		9.8	4 1.2	49.8		9.4	20 49.9	15.2		7.8	41.7	7.1	K
9.6	40.0	4.7		8.8	37.3	35.4	M	9.8	13.4	40.5		5.7	21 4.1	14.5	K	10	57.5	41.5	
9.7	24 8.4	15.2		9.2	42 5.9	58.3		9.3	5 52.5	17.2		9.1	15.5	37.7		9.0	38 3.4	27.8	
9.9	11.6	53.4		9.5	28.5	29.7		9.4	6 25.2	46.8		9.1	53.4	32.5		7.8	41.1	46.1	Sj
8.9	21.7	50.7		7.5	55.9	52.2	Sj	8.0	39.0	22.4	Sj	8.2	22 29.1	25.5	K	9.5	51.2	57.1	
9.3	42.2	29.5		8.0	43 1.5	26.8		9.1	7 26.7	46.3		9.1	49.5	52.0		9.8	39 32.7	52.9	
8.5	45.4	41.1	L	9.5	29.8	24.1		10	33.7	59.6		9.3	57.4	20.4	M	9.5	50.3	30.2	
9.5	50.1	29.9		9.4	48.9	54.2		7.2	8 3.5	59.1	Sj	9.1	23 16.9	50.8		9.0	40 3.3	41.0	M
9.1	25 2.2	34.1		9.0	53.5	32.0	K	10	5.5	49.7		10	32.5	39.7		9.7	13.7	21.7	
var	25.9	26.9	B	7.7	44 8.8	27.0	Sj	8.5	22.1	22.9		9.6	34.8	26.0		7.8	41 0.6	29.8	K
9.7	47.4	10.9		9.8	15.8	41.3		10	40.8	43.8		9.8	40.6	3.9		10	12.2	58.3	
7.0	50.3	52.7	Sj	10	26.8	51.3		9.2	50.6	13.3		10	41.0	26.1		9.5	14.2	0.3	
9.1	26 15.8	32.1	M	10	53.7	34.2		8.0	57.4	47.7	Sj	9.5	59.0	56.0		9.8	24.8	48.7	
10	51.5	2.0		9.2	45 4.1	32.2		9.5	9 45.2	46.6		8.4	24 39.8	53.5	K	9.8	42 10.2	45.6	
9.4	27 4.1	51.2		10	21.3	32.6		9.5	10 14.2	42.8		9.2	51.8	33.9		8.9	22.9	17.6	M
8.1	30.5	13.3	L	10	48 24.3	58.5		9.7	19.1	58.4		8.6	25 9.8	34.1	Sj	8.3	23.2	33.7	K
9.5	57.0	26.1		9.0	34.7	35.6	M	6.5	19.6	51.3	Sj	9.3	19.5	54.4		8.9	27.2	3.9	M
9.4	28 0.6	10.1		9.4	51.8	40.0		7.5	11 3.5	20.6	K	7.8	41.9	17.5	K	10	28.7	47.6	
9.8	17.6	37.1		8.8	55.8	30.9	K	10	6.6	55.9		8.0	26 0.3	13.3	K	9.7	36.8	26.9	
9.4	40.3	14.3		9.2	49 8.8	35.4	K	10	22.9	32.8		9.8	6.4	28.1		9.0	58.2	40.0	
10	48.2	28.8		8.8	23.4	44.3	K	10	31.8	14.4		9.9	13.6	10.2		9.6	43 31.9	19.9	M
9.4	55.6	13.2		9.5	50 43.2	26.5		9.8	32.6	58.0		8.9	25.3	38.9	K	9.8	38.6	50.1	
8.6	29 38.9	23.7		8.3	47.7	9.8	K	9.0	45.6	31.6	K	10	50.0	47.9		9.5	44.2	15.6	
9.8	51.6	26.5		6.5	51 23.0	12.9	K	10	12 0.6	23.7		9.0	27 33.4	44.5		9.0	44 11.1	1.5	M
9.2	30 29.1	42.2		9.0	41.2	57.5	K	6.5	16.1	4.2	Sj	9.6	46.1	22.8		9.8	22.6	20.4	
9.4	45.5	3.3	B	9.1	52 42.3	3.8		9.3	18.5	11.1		9.1	51.7	33.7		8.5	23.0	47.9	L
9.4	49.2	35.5		9.5	48.3	25.7		10	31.0	56.4		9.0	28 26.1	36.3	Sj	9.6	32.1	59.5	
8.7	57.5	52.0	K	9.8	50.2	57.4		10	46.1	29.7		9.0	50.9	48.7	K	9.3	45 3.0	19.9	
9.5	31 30.5	14.2		8.8	52.7	34.8	K	9.6	56.9	27.3		9.5	29 37.1	43.4		9.6	8.8	30.5	
9.5	49.1	23.6		8.0	53 17.7	2.5		9.0	13 0.8	46.9		9.5	30 30.1	21.0		8.7	30.6	38.1	K
9.8	50.5	58.8		8.5	29.1	24.8	K	9.3	8.6	56.7	M	9.2	40.8	6.0		8.8	31.6	36.8	K
9.5	32 8.0	58.5		10	47.7	56.4		9.5	28.0	15.4		9.2	51.1	19.4		9.7	50.2	27.1	
9.8	10.5	30.1		10	55 5.7	53.0		9.4	31.5	18.2		9.5	51.3	13.6		9.6	46 4.1	57.5	

4101—4160					4161—4220					4221—4280					4281—4340					4341—4400				
	14h—15h		−6°			15h		−6°			15h		−6°			15h		−6°			15h—16h		−6°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.3	46	51.2	48.1	M	9.3	7	20.9	27.7		8.5	22	47.0	7.2	Sj	9.3	40	38.9	38.8	M	10	54	8.2	18.0	
8.0	47	31.7	41.9	K	8.9		53.4	37.3	B	9.0		49.2	58.8	K	9.4	41	19.1	37.0		8.7		16.8	3.2	K
9.4		36.6	20.6		9.5		59.1	9.6		9.5	23	5.4	9.5		9.3		54.1	32.6		9.0		30.8	23.2	M
9.3		55.6	2.4		8.0	8	22.6	11.5	K	8.3	24	7.6	39.3	K	10	42	6.9	30.3		9.6	55	8.3	1.2	
9.5	48	27.1	46.9		9.4		33.9	22.5		9.5		10.6	47.8		9.6		9.4	27.4		9.6		15.3	10.8	
9.5		41.7	28.8		9.4		39.6	33.8		9.8		12.5	22.5		9.5		26.9	56.0		9.4		18.4	3.2	
9.4	49	3.6	49.3		9.1		49.0	41.5	M	9.0		19.6	46.7		9.1		28.3	5.8		9.5		23.0	18.2	
9.5		7.6	20.7		9.6		51.0	45.4		9.4		57.2	24.9		9.0	43	3.0	49.0	M	9.8		33.9	55.3	
9.8		28.9	20.0		9.5	9	29.9	40.2		9.8	25	3.1	44.0		9.8		22.0	29.2		9.8		48.0	27.3	
9.3		51.2	43.9		8.3		49.0	57.9	K	9.6		28.5	32.6		9.1	44	20.4	51.8		9.6		54.8	14.0	
8.4	50	3.5	9.4	K	9.0	10	46.9	53.0	M	9.5		34.5	10.9		9.1		36.8	11.3		9.9		58.4	4.1	
9.8		22.2	36.2		9.5		49.0	58.8		9.0		45.9	2.0		9.5		43.3	6.6		9.5	56	20.9	53.2	
9.8		35.3	56.7		8.8	11	17.5	40.7	M	9.6		51.1	41.1		9.3		44.7	36.1		9.6		26.8	50.5	
9.0	51	12.1	43.5	M	9.5		47.6	19.0		8.9		55.0	42.5	Sj	9.8	45	7.8	3.9		9.3		28.7	4.1	M
9.1		39.5	57.4		9.5	12	21.6	12.2		9.2	26	21.9	2.0		9.8		10.3	12.4		9.4	57	2.9	14.7	
9.8	52	23.4	43.2		9.2		46.5	9.7		9.1		25.6	39.2		9.9		33.7	10.8		9.0		8.4	26.1	M
9.2		30.0	56.0		9.2		54.9	52.4	M	8.9		44.2	23.8		9.5		35.3	16.0		9.1		9.5	51.9	
9.6		51.6	35.0		9.3		59.0	39.5		9.5		44.6	48.3		9.5		36.5	46.6		9.2		37.4	6.8	M
9.3	53	38.1	51.1		9.5	13	21.4	43.5		9.8		54.0	32.7		9.5		36.9	23.5		9.5		47.5	4.9	
9.7	54	28.8	36.5		9.4		23.0	25.5		9.7	27	5.3	39.4		9.8		42.4	20.1		8.2		58.9	41.0	M
9.7		49.2	52.8	B	9.0		26.1	5.2	Sj	9.8	28	0.6	55.0		9.8		51.8	53.7		9.6	58	7.1	44.9	
9.4	55	16.4	28.4		9.3		42.9	54.6		9.6		16.8	45.1		9.2		52.9	42.9		9.1		27.3	15.9	
9.8		47.1	58.4		7.0		52.4	17.7	K	9.2		32.0	43.5	Sj	9.4	46	12.3	35.7		9.6		27.8	53.0	
8.0		54.6	59.8	K	9.6		52.4	23.2		9.5		35.9	2.2		9.5		18.4	40.6		9.3	59	49.4	6.7	
7.7	56	27.9	19.4	K	9.2		57.5	3.1		10		55.5	47.0		9.8	47	2.7	8.8		9.5		52.2	25.4	
9.8		30.3	2.9		9.5	14	1.8	47.0		10	29	2.0	56.2		9.2		21.3	53.8	M	9.8	0	17.4	47.8	
9.5		52.1	51.8		9.1		5.8	39.7		9.0		9.2	4.1		9.2		28.6	22.9		9.6		39.1	26.5	
9.5	57	2.9	29.9		9.5		41.1	27.2		9.5		17.9	7.6		9.8		36.9	29.4		9.1		57.8	39.7	M
9.4		40.6	46.2		9.0		42.8	46.8	M	9.5		36.8	30.8		9.4		43.6	25.5		9.5	1	9.3	35.7	
7.3		51.0	26.8	K	9.5	15	10.9	24.6		10	30	17.5	41.3		9.3		56.4	2.8		8.3		47.6	20.7	K
9.3		59.3	2.1	Sj	9.5		24.0	1.5		9.5		50.4	9.7		9.8		56.8	8.9		10		48.5	39.5	
9.0	58	1.4	17.0	M	9.4		39.1	15.8		9.5		55.9	8.6		9.0		58.0	50.3		9.3		58.3	9.8	
9.5		13.1	30.4		7.3		43.5	4.9	Sj	9.3	31	8.0	39.8	Sj	9.1	48	8.8	42.7		9.1	2	4.8	33.5	M.
9.6		34.2	41.3		9.5	16	21.1	56.5		9.4		11.5	45.3		9.1		23.3	14.9		9.8		17.4	55.4	
10	59	18.5	57.0		9.5		48.6	46.2		9.4		13.9	24.2		10	49	14.9	52.1		9.2	3	16.4	5.0	
8.6		23.3	2.7	M	9.3		53.2	32.3		9.4		57.9	56.4		8.2		16.7	33.1	K	10		19.9	38.6	
9.4	0	4.4	10.5		9.7	17	25.4	27.6		9.5	32	40.8	49.4		7.8		23.4	24.0	K	9.0	4	15.0	23.1	
9.4		37.6	47.8		9.5		46.0	23.7		8.8		44.5	49.7	M	9.3		49.9	49.7	Sj	9.4		19.3	30.1	
9.5	1	1.0	46.0		9.2	18	5.5	44.2	M	9.1	33	15.5	50.5	M	9.5		51.4	24.1		9.5		39.8	38.0	
9.6		8.0	15.1		9.4		10.1	27.8		9.5		40.3	18.2		9.5		51.7	46.6		9.5		40.0	10.2	
8.4		14.6	1.1	B	9.4		11.1	17.8		9.5	34	49.4	40.9		9.6	50	0.4	27.4		10		52.9	51.0	
9.5		21.3	21.2		9.5		23.0	55.3		9.5		49.5	32.3		9.6		22.0	29.4		9.4	5	2.3	27.7	
9.1		21.5	51.3		9.6		40.6	47.5		9.8		57.9	13.6		9.0		28.9	15.2	K	9.4		21.4	36.2	M
9.8		24.2	14.9		9.0		59.2	38.2	M	9.5	35	19.0	59.3		7.8		50.8	16.9	K	9.5		33.4	50.1	
9.6		30.2	12.5		9.8	19	2.8	27.7		9.5		50.4	17.9		9.5		57.3	11.2		10		46.8	31.8	
7.9	2	14.6	9.7	K	9.1		16.7	32.9	M	9.6	36	2.0	37.5		9.8	51	0.4	39.2		8.0	6	7.4	31.5	Sj
8.3		58.2	59.5	B	9.6		18.5	36.6		9.5		7.4	16.6		9.1		40.2	49.4	M	9.4		14.3	44.5	
9.4		58.9	34.5		9.4		47.6	50.3		9.0		16.4	13.2	M	9.7		42.9	56.7		8.9	7	3.3	7.1	K
9.1	3	0.7	34.0		9.8	20	15.4	30.1		9.0	37	26.5	44.2		9.5		48.8	53.0		9.9		16.8	45.5	
9.8		50.7	18.9		9.3		21.6	48.9	M	9.5		30.8	3.3		6.3		54.9	53.0	K	9.5		23.3	47.1	
9.6	4	14.5	52.6		9.4		22.9	59.2		10		36.5	55.6		7.7	52	5.9	36.0	K	8.0		24.2	59.2	Sj
9.5		20.1	17.5		9.1		34.5	9.7		9.7	38	1.4	51.8		8.2		17.9	42.4	K	9.2	8	17.7	13.5	
9.5		28.9	31.8		9.6		48.2	0.1		9.5		15.4	16.4		8.7		22.7	26.1	M	9.1		41.8	36.8	M
8.7		32.1	14.5	B	9.5	21	9.5	14.6		10		18.0	55.9		10	53	8.1	30.8		10		58.2	46.9	
9.0		42.1	6.6	M	8.8		10.7	7.9	M	9.5		36.1	28.4		10		11.4	57.6		9.1	9	44.6	19.4	
9.5	5	31.0	44.6		8.4		26.9	28.3	K	9.5		41.0	33.4		10		26.3	57.0		9.0	10	39.3	38.0	Sj
9.5		38.6	3.7		9.5	22	4.1	59.0		10		46.5	39.8		8.4		31.0	33.6	L	9.6		50.9	43.1	
9.1		43.0	41.5		9.7		17.9	34.6		9.6		47.5	48.7		8.9		40.1	28.8	M	9.4	11	4.4	16.5	
9.5	6	47.5	49.8		7.3		21.5	20.8	K	9.2	39	29.4	3.8		9.8		50.0	58.1		8.0		18.6	57.5	K
8.2		59.0	55.8	K	9.8		21.5	0.5		9.3		33.9	55.6	M	10	54	2.2	44.0		6.9		23.7	30.9	K

4401—4460					4461—4520					4521—4580					4581—4640					4641—4700				
	16h		—6°			16h		—6°			16h—17h		—6°			17h		—6°			17h		—6°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.5	11	57.6	16.3		9.6	27	10.7	28.8		9.8	48	0.1	38.7		8.5	12	53.6	57.4	K	9.1	36	28.1	27.5	M
9.5		58.0	55.7		9.5		35.9	35.0		8.9		10.9	58.8	K	9.0	13	7.1	1.2		9.7		38.3	20.4	
10		58.3	44.7		9.6	28	4.8	27.7		9.8		19.4	50.0		9.0		46.0	56.5	Sj	9.0		42.7	33.8	
8.8	12	13.9	35.6	M	8.9		10.0	53.6	K	9.7		36.0	31.8	M	10		51.6	29.3		9.5	37	5.2	48.7	
9.5		20.3	41.0		10		30.8	53.2		9.7		37.5	26.5		9.3	14	15.5	40.0		9.5	38	30.6	34.3	
9.8		37.2	26.5		9.5		53.3	11.6		9.8	50	5.5	30.6		9.0		45.0	48.2		9.3		31.7	46.4	M
9.2		52.3	37.6	M	6.2	30	15.7	14.2	K	9.8		26.2	54.8		7.8		55.9	10.9	K	8.5	39	1.8	48.4	K
9.4	13	9.8	7.5		9.1		24.9	44.0		9.4		32.6	47.0		9.5	15	10.4	14.2		8.0		12.6	9.0	Sj
9.0		15.4	15.0	M	7.5		38.0	51.1	Sj	9.4	51	4.7	30.0		7.0		14.1	57.7	Sj	9.2		23.4	13.5	
10		37.3	54.5		9.2		53.0	52.9		9.8		9.6	33.1		9.3	16	45.5	50.0		9.1		27.7	54.4	
9.6	14	4.2	53.2		9.5		56.8	13.0		9.3		23.0	20.3		9.9	17	23.6	34.1		8.7		49.7	30.7	M
8.9		9.8	47.3	Sj	9.7	31	0.0	57.3		9.4		28.3	31.9		7.0	18	11.8	26.6	K	9.8	40	16.1	14.5	
10		21.8	58.8		9.5		5.0	30.5		9.4		28.8	36.0		9.4		13.0	2.6		9.0		46.5	40.2	
9.3		32.9	2.1		9.5		31.3	11.8		9.5	52	3.7	53.6		9.6		53.7	59.7		9.6		52.7	26.4	
9.5		39.0	27.0		9.2	32	9.8	28.3	M	9.8		45.3	38.5		9.5	19	42.6	57.9		9.6		54.2	38.3	
8.9		42.5	30.8	Sj	9.8		28.4	39.8		9.9		48.4	43.4		9.1		56.4	7.0		9.8	41	8.4	6.8	
9.8		48.2	13.0		9.6		39.0	58.8		8.3	53	0.0	20.8	M	9.0	20	6.5	3.6		9.7		31.5	37.3	
9.0	15	4.7	15.4		9.8		47.4	3.6		7.3		25.6	48.7	K	9.8	21	4.2	12.1		9.8		36.6	34.2	
7.3		12.3	51.8	L	9.8	33	0.9	30.1		7.2		47.5	30.9	Sj	9.7		5.4	7.6		9.7		46.5	52.7	
8.9		48.8	45.6		9.6		9.0	47.8		9.5	54	49.7	54.5		9.1		10.4	28.5	M	9.0	42	24.6	44.6	M
10	16	11.2	53.7		9.7		16.4	43.4		9.1		58.6	18.4		9.8		28.9	27.2		9.5		25.2	39.1	
9.7		25.8	3.7		9.0		56.8	26.0	Sj	7.2	55	11.2	8.3	Sj	8.7	22	9.0	47.8	Sj	9.6		46.5	17.5	
9.5		28.0	20.4		9.4	34	6.5	24.7		9.5		33.2	58.1		9.5		15.6	53.6		9.3		47.5	0.0	
8.7		29.4	4.3	K	9.4		7.6	45.0	M	9.5		59.0	17.3		9.4		34.2	8.1		8.8	43	10.7	51.2	K
9.3		36.5	22.7		8.5		20.8	39.4	Sj	9.4	56	56.1	42.1		9.5	23	2.9	18.3		9.8		18.9	22.0	
9.5	17	34.3	51.8		9.2		28.8	23.6		8.8	57	33.2	54.2	K	9.2		29.5	54.3		9.1		35.7	50.8	M
9.3		38.8	51.0	M	9.0		30.8	57.5	K	9.4		51.0	42.0		9.5		30.3	11.8		8.2		47.8	48.9	Sj
9.4		41.7	45.3		9.4		41.4	7.2		9.3		57.3	27.0		9.4	24	2.8	21.9		9.7		52.7	0.5	
9.5	18	5.3	36.4		9.2		43.1	7.4	M	9.5	58	48.5	31.5		8.8		49.3	9.2	Sj	8.3		55.4	13.1	K
9.0		18.8	36.9	Sj	9.1	35	8.7	48.1	M	9.5	59	21.0	1.8		9.4	25	36.2	13.1		9.7	44	3.9	21.6	
9.8		27.2	58.1		9.0	36	15.7	13.6	M	9.8		33.5	36.5		8.8	26	3.9	18.3		9.1		19.1	21.9	M
9.7		53.3	53.2		9.5		58.8	58.9		9.2		50.9	14.1		9.0		30.5	52.7		6.0		52.7	6.2	K
9.5		55.2	57.9		9.0	37	8.5	1.8	M	9.3	0	36.3	21.9		9:5		36.4	16.9		9.8	45	56.4	10.3	
10	19	23.0	14.1		8.5		12.7	49.5	Sj	9.8		38.0	4.8		9.1	27	17.5	53.1		9.3	46	28.3	47.9	M
9.2		44.2	46.1		9.6	38	13.2	16.4		8.9		58.2	12.3	K	9.0		20.3	20.4		9.5	47	0.4	5.9	
9.9	20	11.5	25.7		9.6		32.1	56.9		9.7	1	4.0	40.8		10		52.9	36.0		9.4		37.8	40.2	
10		23.6	30.5		8.1	39	22.8	42.4	Sj	9.4		11.3	14.6		9.5		53.4	17.5		9.3		45.2	57.2	
10		33.2	47.2		9.5		25.7	19.3		9.4		40.3	13.9		6.8		55.3	1.5	K	8.0	48	20.2	38.9	K
9.4	21	4.3	17.1		8.4		40.9	4.3	K	8.9		48.3	17.6	M	8.5	28	4.3	6.2	K	8.7		40.7	31.6	K
9.8		19.5	55.0		9.5	40	4.2	59.5		9.2		55.0	35.7	M	8.0		8.4	1.7	K	9.5		56.9	24.6	
9.5		57.0	3.5		9.5		34.6	41.4		9.4	2	5.3	26.2		9.5		55.8	16.0		8.8	49	10.2	39.2	L
9.6	22	18.7	20.1		9.4		54.0	34.0		9.3		13.9	1.6		9.5	29	34.6	26.2		8.8		18.0	39.8	K
9.5		36.4	31.0		9.2		57.6	13.1	M	9.3		24.9	58.8		9.2		47.5	42.3		10	50	43.9	19.9	
9.1		42.9	7.2		9.3	41	24.8	32.1		9.4	3	25.6	52.7		8.5	32	0.9	23.6	M	10		57.1	18.5	
9.8	23	16.7	51.6		9.6		51.9	11.9		8.5		35.7	26.9	M	9.1		14.5	51.8		9.0		57.1	13.4	
7.9	24	1.0	42.1	Sj	9.0	42	46.6	38.0	Sj	9.4	4	3.1	40.8		9.3		29.3	6.4		9.7	51	4.2	10.3	
10		4.6	59.0		9.5	43	34.4	29.6		9.5		19.9	5.6		9.8		42.8	28.0		9.5		9.6	44.6	
10		5.6	50.1		9.1	44	18.0	21.6		9.5	5	29.1	15.7		9.8		44.4	15.0		8.0		14.7	37.5	K
9.8		6.4	30.7		9.4		26.1	35.1		9.4		39.5	39.3		8.8	33	20.4	22.2	M	8.3		29.2	50.2	K
9.0		39.1	52.2	K	9.8		29.9	1.6		9.1	6	49.8	20.2		9.2		59.0	55.0		8.2		35.9	6.1	K
9.1		52.4	8.2		9.5	45	56.2	56.5		8.2	7	38.3	20.0	K	9.5	34	10.0	52.7		9.5	52	1.3	45.2	
9.7	25	0.1	27.6		9.5	46	3.5	28.0		9.8		56.1	6.3		9.3		52.3	22.9		8.8		7.5	57.9	K
9.3		6.3	17.3		8.5		31.3	27.9	K	9.2	8	1.5	41.4		9.6	35	13.9	39.4		8.1		35.4	36.0	K
9.4		7.5	58.1		9.4	47	1.2	11.5		9.5		49.6	52.3		9.1		20.4	16.5		8.8	53	15.8	5.5	K
9.3		25.9	26.6		9.4		18.3	29.6		5.8		56.6	4.7	K	9.4		42.5	38.8		9.0		17.4	6.1	K
8.6		26.7	38.3	Sj	7.0		20.7	24.8	K	9.2		56.6	47.0		9.5		43.8	4.4		9.8		27.8	10.8	
9.6		30.1	15.9		9.5		27.9	23.9		8.0	9	23.5	37.7	K	9.5		49.3	21.2		9.1	54	50.4	19.1	
9.5	26	23.8	7.0		9.5		29.0	30.5		9.5	11	0.0	41.9		8.8	36	9.9	11.6	K	8.5	55	10.1	54.2	M
8.2		35.3	31.1	M	9.2		42.8	5.2		8.9		33.2	26.2		9.5		20.1	27.8		9.5		45.6	58.4	
9.8	27	3.0	40.5		9.3		52.4	47.0		8.5	12	11.6	16.4	Sj	9.4		25.3	26.3		8.3	56	14.4	23.6	K

4701—4760				4761—4820				4821—4880				4881—4940				4941—5000			
	17h—18h	−6°			18h	−6°			18h	−6°			18h	−6°			18h	−6°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.2	56 24.7	55.4	M	8.9	18 25.0	42.4		9.4	30 28.7	10.0		9.5	37 54.1	25.2		7.5	45 0.4	0.5	Sj
9.3	37.9	3.1		8.2	19 3.0	30.2	K	9.1	49.7	4.4		8.9	57.0	36.0	M	9.0	11.1	26.8	M
9.8	46.8	21.4		8.2	9.8	18.8	K	8.5	51.0	6.8	K	9.6	38 8.6	59.0		8.8	15.4	18.3	L
9.8	57 0.2	37.3		8.7	9.9	35.1		9.8	31 2.4	33.6		9.8	12.7	16.4		9.0	29.5	26.4	Sj
9.5	11.2	54.5		9.0	36.4	21.5	M	9.3	13.7	24.0		8.2	16.0	23.9	M	9.1	34.2	37.7	
8.3	11.6	21.2	K	9.5	40.5	39.8		9.5	39.3	39.6		8.7	16.9	27.5	M	8.8	35.3	44.0	M
9.4	20.4	2.0		8.9	20 11.4	10.7	M	9.8	32 21.7	44.8		9.2	20.2	7.1		9.8	46 15.4	43.2	
8.9	58 32.7	43.7	M	9.2	15.8	2.2		10	33 7.5	13.7		9.0	25.2	17.0	Sj	9.8	17.1	15.0	
9.0	47.1	43.1	M	8.3	19.9	14.3	K	10	9.7	54.8		9.5	28.2	10.2		8.9	20.3	17.4	M
9.5	59 3.1	14.3		9.5	43.5	44.9		9.7	13.6	14.5		9.8	41.8	28.1		9.8	31.5	30.0	
9.4	11.0	29.0		9.8	55.4	4.3		10	17.6	53.4		9.5	47.2	12.9		10	35.8	11.1	
9.3	13.6	32.1	M	9.5	21 27.7	19.5		9.5	20.6	19.4		9.7	49.3	25.0		8.9	36.8	39.2	M
9.5	32.1	39.0		9.5	58.3	17.3		10	20.9	47.6		7.8	57.8	50.4	K	8.0	41.5	8.2	L
9.5	39.3	6.5		9.5	22 3.4	28.5		9.9	22.0	54.2		9.3	39 6.8	11.7	M	9.5	44.8	31.2	
9.4	42.3	0.5		9.7	31.5	35.1		9.3	44.8	42.6	M	9.3	13.9	30.3		9.8	51.9	50.9	
9.5	0 20.4	48.2		9.8	49.9	11.6		9.3	47.0	11.1	M	9.4	14.9	22.9		9.3	56.7	15.4	
8.4	49.4	40.6	K	9.5	23 1.1	16.5		9.4	59.8	44.2		7.0	23.9	2.8	K	9.8	57.8	43.7	
9.2	1 16.5	28.4	M	9.5	15.3	48.9		9.8	34 3.3	0.7		9.8	32.7	17.6		10	47 20.6	59.8	
9.5	31.3	8.4		8.3	24 1.0	42.2	K	9.7	18.8	11.0		9.8	33.7	13.8		9.2	31.8	19.9	M
9.3	2 57.6	51.4		9.4	1.3	47.8		9.3	25.2	3.6		10	39.8	45.0		9.5	39.3	32.9	M
9.7	3 4.1	10.9		9.8	7.7	32.0		9.6	29.1	12.3		10	40.6	49.6		9.5	41.3	2.9	
8.7	50.4	3.5	M	9.8	12.1	30.2		9.6	32.7	45.0		9.9	42.4	54.1		9.8	49.3	29.9	
9.2	4 10.1	17.3		8.0	12.4	12.6	K	9.0	34.7	56.7		9.3	47.6	27.6		9.8	50.5	19.4	
9.5	10.9	3.1		9.2	18.7	31.1		9.5	41.3	8.5		9.7	49.4	49.2		8.5	55.6	49.5	K
8.3	43.8	5.2	K	9.7	29.4	34.1		10	45.8	44.4		9.1	54.1	47.3	M	9.4	56.2	8.9	
9.1	5 25.5	48.6	M	9.4	37.0	44.5		9.5	47.3	58.1		9.3	56.7	23.5	M	9.2	48 10.8	31.7	Sj
9.4	6 15.8	12.5		9.4	48.2	20.0		9.5	47.3	37.5		9.7	57.1	43.7		9.4	22.0	30.2	
9.5	55.2	33.0		9.5	25 15.3	42.5		9.5	50.4	24.6		9.8	40 27.2	1.8		9.5	35.4	43.9	
8.7	7 16.1	49.4	K	8.6	33.7	8.8	Sj	9.5	35 4.3	37.1		9.8	33.9	13.3		9.1	37.6	14.3	M
9.3	24.9	51.3		9.5	37.2	9.5		9.5	17.2	29.5		8.8	46.6	37.0	M	9.6	39.3	2.5	
9.0	43.8	0.5		6.5	37.5	0.2	K	9.2	18.8	59.0		9.8	50.2	21.6		9.0	44.1	7.7	L
9.1	8 19.6	50.2		9.9	48.0	26.5		8.7	21.9	58.3	K	9.2	53.0	9.4	M	9.3	46.2	3.5	
9.4	43.9	8.3		9.8	57.7	2.6		9.2	30.1	9.6	M	7.2	54.2	9.6	Sj	9.4	49.0	43.7	
10	9 35.7	12.8		9.5	26 9.6	44.6		9.5	39.3	38.2		9.9	41 0.2	43.6		9.7	49 5.8	44.8	
9.1	53.2	14.0		9.3	14.6	24.8		9.3	48.8	36.2		9.4	2.6	37.0		10	7.0	46.1	
9.3	10 22.1	16.0		9.3	24.7	42.2		9.5	52.7	23.7		8.7	5.4	30.4	K	5.0	18.0	1.8	K
8.5	46.9	9.6	K	9.6	35.2	35.7		9.3	36 2.1	44.3		9.1	20.3	58.9	K	9.8	24.0	7.5	
8.9	53.5	45.2	M	9.5	27 11.3	37.5		9.2	3.0	16.8		9.5	33.8	48.0		9.8	25.1	21.3	
9.1	54.6	47.3		9.5	29.2	38.1		6.0	3.1	57.1	K	9.2	38.7	19.4	M	9.5	26.4	29.9	
9.0	11 46.7	24.4		9.1	33.8	52.6		9.2	8.5	12.0	M	9.1	45.8	48.4		9.5	37.3	40.7	
9.1	55.1	17.3	M	9.2	34.6	27.9		9.9	22.3	44.9		9.2	55.3	58.7	K	9.8	45.5	39.0	
9.3	12 31.7	32.2		9.8	50.7	27.7		9.8	26.7	14.5		6.8	55.3	4.1	K	10	50.4	39.2	
9.3	46.5	41.3		9.8	28 8.7	25.2		9.8	30.7	3.1		8.5	56.5	6.0	K	9.3	52.1	50.4	K
9.1	13 0.6	51.5	M	10	19.3	43.5		9.7	31.6	32.9		9.1	42 16.3	39.5	M	9.4	50 11.8	26.2	
9.1	14 21.8	5.5	M	7.0	19.3	51.1	Sj	9.6	37.9	21.6		9.0	17.3	34.6	M	9.0	20.5	26.0	Sj
9.1	29.9	24.3		9.8	20.5	19.9		9.6	43.2	58.5		9.0	20.2	8.2	Sj	9.0	32.8	11.4	M
9.5	15 5.5	46.6		9.8	31.7	27.9		9.6	44.1	49.4		9.6	32.3	59.4		9.5	59.6	59.7	
9.5	31.9	27.3		9.8	47.7	1.6		9.5	47.2	46.3		9.4	54.4	57.1		9.7	51 7.0	50.6	
9.5	33.2	28.7		8.3	55.2	32.0	Sj	7.0	52.9	40.2	L	8.8	43 21.2	26.7	K	9.0	13.0	57.8	M
9.8	43.9	8.0		9.3	29 23.8	40.5		9.4	55.7	25.4		9.5	22.6	42.9		9.3	20.2	51.5	
7.8	47.8	19.1	Sj	9.0	26.7	43.4	K	8.8	56.6	46.9	L	9.3	29.3	51.8		9.8	28.9	34.0	
9.0	16 32.0	54.6		8.8	36.0	12.8	M	9.0	37 3.1	28.7	M	9.2	29.6	31.4	M	10	41.8	42.5	
8.8	35.9	11.3		9.8	36.2	23.1		9.3	11.7	19.8		9.2	30.6	30.4	M	9.1	51.6	16.2	M
9.1	42.9	2.0		9.5	43.5	17.6		10	25.2	32.5		9.6	40.6	11.9		9.8	52 10.9	2.1	
7.0	56.0	40.3	K	9.7	58.7	29.6		9.6	28.8	27.7		9.6	46.3	7.7		9.5	16.0	47.8	
9.2	17 1.9	25.8		8.2	30 2.3	55.0	K	9.7	37.6	39.9		9.5	51.8	27.6		9.8	16.5	58.3	
9.7	37.9	30.1		8.6	11.2	54.2	K	9.5	37.9	46.0		9.5	44 0.8	53.5		9.8	17.4	15.0	
8.8	42.9	33.1	M	9.8	15.8	34.1		9.2	45.4	4.3		9.2	12.9	4.8	M	9.4	18.5	58.3	M
9.6	50.3	24.3		10	19.3	43.5		8.8	48.4	12.8	Sj	9.2	24.3	58.4	M	9.3	45.1	34.4	M
9.3	18 24.0	52.0		9.0	26.2	19.8		10	49.7	40.2		9.3	38.3	33.7		10	52.7	34.5	

4869: röthlich gelb

4929, 4932, 4933: Hauptsterne des mit Nebel vermischten Cumulus GC 4437, der sich in der Declination 28′ ± 3′ beiläufig von 43m 10° bis 43m 32° erstreckt.

5001—5060					5061—5120					5121—5180					5181—5240					5241—5300				
	18h—19h		—6°			19h		—6°			19h		—6°			19h		—6°			19h		—6°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.6	52	54.5	29.7		9.5	4	10.2	21.3		9.8	14	50.6	39.5		9.7	25	46.9	28.8		8.2	35	0.9	48.8	K
9.1	53	1.1	14.7	M	9.3		25.0	26.0		9.5	15	11.7	6.5		10	26	15.8	34.0		8.8		28.6	27.6	Sj
9.4		15.1	10.9		8.4		53.3	41.8	Sj	9.1		16.6	59.5	K	9.4		32.0	12.3		9.3		46.1	4.6	M
8.5		16.5	47.6	M	9.5		53.5	14.8		9.5		18.5	21.0		9.4		35.9	48.5		9.9	36	8.4	55.9	
7.3		40.9	23.4	Sj	9.1	5	12.9	1.0	Sj	9.3		30.1	51.5		9.9		57.9	44.9		9.9		10.6	53.9	
9.1		55.9	52.1	Sj	9.5		21.1	32.7		9.4		39.6	50.6		9.3	27	2.9	52.0		9.5		15.3	57.2	M
7.7	54	2.2	35.0	K	9.1		31.1	42.9	M	9.5		56.1	10.5		9.3		4.9	46.0		10		43.5	31.2	
9.4		5.9	49.3		9.8		45.5	19.5		9.5		57.1	38.5		9.3		7.0	32.6		9.1		56.4	53.0	M
7.3		8.4	23.7	K	9.8		47.8	4.4		9.4		57.6	35.2		9.4		9.3	58.1	M	9.3	37	3.0	11.7	
9.6		13.7	12.0		9.6		59.0	59.4		9.8		58.0	23.2		9.5		23.0	5.2		9.2		4.4	48.2	
9.4		19.5	0.7		9.3	6	4.5	36.0	M	9.4	16	2.1	35.2		10		28.3	59.8		9.7		12.6	47.1	
9.0		24.1	54.8	Sj	8.8		8.1	8.3	M	9.5		36.1	43.6		9.1		39.2	10.4	M	10		33.5	59.8	
8.5		29.4	37.6	K	9.6		15.3	29.0		9.5		51.5	3.9	M	9.2		48.1	0.5		9.3		36.3	29.6	M
9.6		29.9	7.6		9.8		33.0	34.9		9.7		54.5	8.2		9.1		54.5	3.6		9.1		39.0	54.7	M
9.3		41.8	34.1		9.4		34.1	9.1		9.6	17	0.4	13.7		9.0		55.1	28.2		9.5	38	14.4	53.8	
8.9		47.0	32.4	K	9.2		43.6	56.2		9.8		2.9	54.5		9.3	28	8.2	15.3		10		27.7	46.7	
9.1		54.4	40.3		6.5	7	36.5	17.3	K	10		10.6	28.0		9.8		26.5	30.1		9.8		56.0	15.7	
9.4	55	9.9	56.0		9.3		50.0	32.7		9.5		18.6	45.1	M	9.6		27.7	26.6		9.5	39	4.5	45.4	
9.8		24.9	22.2		9.4		58.5	44.6		9.8		27.4	59.8		9.5		31.2	36.1		9.4		6.5	39.0	
8.2		32.6	2.3	K	9.1	8	1.3	32.5		9.1		41.2	53.9		9.3		33.5	20.4	M	9.1		16.2	4.0	M
9.6		34.0	59.3		9.8		27.5	2.0		9.4		55.6	30.0		8.0		41.7	17.1	K	9.4		19.8	40.1	
9.5		40.7	52.8		9.3		54.5	33.5		9.0		58.6	45.2	M	9.8		49.2	39.8		9.4		29.7	10.8	
9.5		41.9	27.4		9.8	9	1.0	44.8		9.5		58.6	54.8		9.5		52.1	53.5		7.8		35.2	41.7	K
9.8		55.8	2.3		9.8		17.0	47.1		10	18	10.1	31.4		9.5	29	11.4	51.7		9.5		51.6	36.8	
9.0	56	15.5	16.4		9.5		37.5	59.5		9.7		39.1	27.2		9.8		21.0	39.9		9.4	40	7.0	32.5	
9.8		17.2	44.2		9.0		57.0	13.6	M	9.5		46.8	30.7		9.3		26.2	27.4		9.3	41	21.4	59.4	
9.5		18.0	7.4		9.5	10	0.6	11.1		8.7		51.9	54.6	K	9.4		29.3	45.1		9.5		24.5	39.9	
9.6		18.4	40.2		9.7		14.0	33.5		9.7	19	3.4	59.9		9.5		36.7	36.8		9.5		24.9	59.8	
9.4		55.5	59.5		9.7		15.0	44.3		9.3		28.3	44.4		9.3		45.5	4.5		9.0		30.0	23.5	K
9.2	57	0.8	13.0		9.5		41.5	24.2		9.5		32.4	1.5		9.0		58.9	18.7	M	9.5		56.0	31.1	
9.9		5.8	41.5		9.0		42.6	39.7	K	7.7		37.0	1.2	K	9.0	30	0.0	6.0		9.4	42	12.7	28.8	
9.3		23.2	37.5		7.8		46.2	57.0	K	9.7		59.1	34.5		9.4		5.1	52.6	K	9.3		19.8	3.8	
8.8		33.0	23.0	Sj	9.4		46.2	55.9		9.8	20	20.9	57.5		8.0		5.4	27.9	M	9.2		49.9	51.9	
9.0	58	36.2	17.3	M	9.9	11	1.0	7.7		9.1		37.0	26.2		9.4		32.3	50.6		9.4		54.2	1.8	
9.5		38.5	35.5		10		2.8	13.5		9.5		57.9	31.9		9.6		47.9	23.2		9.0		56.8	9.3	Sj
10	59	8.3	59.8		7.8		3.1	1.6	K	9.5	21	1.3	13.1		9.4		57.0	15.8		9.3		59.7	30.9	
9.7		11.7	57.6		9.1		10.0	17.9		9.2		11.8	25.4		9.0	31	11.6	3.8	Sj	9.6	43	36.3	34.8	
9.1		21.1	0.8	M	9.4		11.3	29.0		8.3		12.9	27.8	Sj	9.8		37.9	44.8		9.6		37.2	56.6	
9.3		22.9	6.4		9.2		54.0	27.1		9.2		23.8	19.2		9.7		41.0	24.7		9.8		52.3	39.8	
8.5		48.2	56.0	K	9.8	12	1.1	57.7		9.4		29.5	35.7		9.7		48.2	22.1		9.5		53.4	26.0	
9.8	0	1.5	39.8		9.6		4.5	57.9		9.5		36.1	46.4		8.0		53.4	23.1	Sj	9.9		58.7	59.5	
9.5		19.0	9.6		9.3		15.0	50.7		9.5		36.9	20.3		8.2	32	9.6	28.8	K	9.4	44	7.6	28.0	
9.8		40.5	42.5		7.0		16.0	53.4	K	9.5		52.8	32.0		8.7		18.3	26.0	K	9.5		19.3	6.9	
9.3	1	11.9	16.0		9.8		20.5	55.4		9.1	22	7.9	19.2	M	9.3		27.3	43.9		8.8		19.6	42.9	K
9.1		15.2	28.7		9.5		43.1	39.6		9.0		31.4	51.4	K	9.6		28.2	38.1		9.1		44.2	51.8	
8.5		29.2	17.0	K	9.1		46.6	49.2		9.0		32.8	49.6	K	8.7		32.5	10.8	K	8.8	45	1.2	16.4	K
9.5	2	8.4	12.8		8.6		46.8	19.1	M	9.8		37.4	8.8		9.5		51.3	58.5	M	9.5		3.5	50.5	
9.5		9.8	11.5		9.9		47.0	18.5		9.9		57.1	23.4		9.5		53.4	18.0		9.5		6.2	15.1	
8.8		28.6	3.2	Sj	9.0	13	0.6	9.5		9.5		58.0	33.9		9.5	33	26.5	31.3		9.0		8.0	58.7	
9.8		34.0	32.5		9.8		8.0	35.3		7.0	23	7.4	48.5	K	9.1		29.6	32.7	K	8.8		10.1	36.9	M
9.3		51.0	24.8		9.5		22.9	34.4		9.4		24.6	27.1		9.4		33.0	16.2		9.4		13.4	55.8	
9.0		58.2	26.1		9.4		30.8	40.8	M	9.0		59.3	42.3	M	9.8		36.6	23.5		9.8		15.7	15.3	
9.6	3	9.8	46.9		9.9		33.6	19.9		9.5	24	1.8	56.6		9.2		36.8	4.1	M	9.8		17.7	4.2	
6.8		10.0	50.7	K	9.8	14	9.3	17.6		9.5		6.9	40.1		10		40.4	46.1		8.3		37.6	22.4	Sj
8.8		19.1	36.3		9.6		9.5	52.5		9.5		26.2	26.7		9.3		57.6	30.3		9.0		40.1	22.6	K
9.3		19.4	39.9		9.8		24.6	57.2		9.5		42.7	34.4		9.7	34	11.9	33.5		9.8		56.0	45.7	
9.5		34.5	59.1	M	8.0		26.0	18.8	L	9.0		59.9	7.8	Sj	7.9		33.5	24.8	Sj	9.1	46	5.8	10.3	
9.5		37.0	46.2		9.5		33.3	21.2		9.5	25	22.4	26.8		9.5		36.3	30.2		9.5		11.4	6.8	
9.0		44.0	17.2	M	9.5		37.0	24.2		9.0		39.3	56.1	K	9.5		46.0	30.0		9.5		33.4	32.5	
8.9	4	4.1	39.4	K	9.5		37.5	34.7		9.2		43.7	20.2		9.8		59.9	41.5		8.5		46.5	45.3	K

5269: 30:30 23′5.″2 B_1, Ep. 1884.63

5301—5360

	19h	—6°	
m	m s	′	
9.4	46 48.9	8.6	
9.5	47 1.0	58.4	
9.6	4.6	23.1	
9.5	17.5	47.5	
9.2	25.8	28.2	M
9.4	27.8	53.4	
9.2	39.6	36.6	
9.8	54.1	36.6	
9.8	48 37.6	24.8	
9.2	56.7	35.2	M
9.6	49 0.9	8.2	
9.1	31.7	21.9	
8.9	48.0	53.2	K
10	48.6	5.0	
9.5	49.6	23.2	
9.7	56.7	30.5	
9.4	50 5.8	12.9	
9.6	12.0	16.0	
7.5	12.3	49.6	K
8.2	29.1	44.3	K
9.3	38.2	32.8	
9.3	57.4	11.4	
9.8	51 24.3	2.5	
9.1	36.5	35.6	
9.5	39.6	43.1	
9.0	50.0	48.4	K
9.0	52 6.7	20.5	
9.5	13.8	29.6	
9.5	16.3	12.4	
9.6	17.5	53.1	
8.9	22.5	3.6	R
9.4	42.9	5.1	
9.6	55.6	31.1	
9.5	53 4.1	49.7	
9.4	21.6	56.1	
9.5	29.5	50.8	
9.5	40.3	11.4	
9.7	41.5	33.6	
8.2	51.1	46.4	Sj
9.4	54 4.0	1.1	
9.1	5.5	51.3	Sj
8.7	11.6	37.9	K
9.1	16.6	43.0	K
9.5	41.1	55.0	
9.3	56.0	46.0	M
9.1	55 14.5	50.5	K
9.0	20.1	41.3	K
8.8	31.9	11.3	M
9.3	56 4.4	7.0	
9.1	24.8	18.1	M
9.0	30.2	25.1	Sj
9.6	40.1	47.3	
9.5	49.7	24.1	
9.5	53.7	5.5	
9.4	57 7.5	30.3	
9.5	10.4	7.1	
9.5	11.2	23.0	
9.4	21.7	25.4	
9.1	28.3	3.8	
8.5	34.1	59.7	Sj

5361—5420

	19h—20h	—6°	
m	m s	′	
8.7	57 36.6	12.5	Sj
9.2	42.2	0.8	
9.8	52.6	43.7	
9.4	55.4	18.4	
9.5	57.7	29.6	
9.0	58.0	19.0	K
9.3	58 15.2	47.1	
9.5	23.4	31.5	
9.5	27.6	3.1	
9.4	51.7	37.1	
9.5	59.4	29.5	
9.5	59 14.6	55.3	
9.5	28.7	34.7	
9.0	29.9	45.5	Sj
9.6	35.3	20.1	
9.0	45.1	44.3	R
9.5	45.2	10.6	
9.5	45.9	4.2	
9.5	57.7	34.9	
9.3	0 30.0	10.6	M
9.4	54.1	56.9	
9.8	1 11.8	2.8	
9.5	14.5	28.4	
9.3	31.6	58.9	
9.5	47.7	56.0	
9.1	49.4	21.4	
9.8	2 12.7	11.3	
9.4	16.6	47.5	
9.5	30.1	50.6	
9.2	36.8	3.9	R
8.0	45.7	35.2	K
9.8	3 2.9	9.9	
9.7	9.3	16.2	
6.8	22.2	30.6	Sj
9.5	39.3	22.0	
9.5	40.1	57.7	
8.5	51.3	34.3	Sj
9.5	55.8	48.9	
9.0	58.8	33.7	K
9.5	4 18.4	15.6	
9.8	33.5	35.0	
9.5	46.9	17.6	
6.8	53.7	47.6	K
9.8	58.3	18.4	
9.5	5 1.4	16.2	
9.5	3.2	8.2	
9.0	10.3	16.3	K
9.1	31.0	12.2	K
9.5	54.6	56.6	
9.1	6 31.6	4.9	M
7.5	40.4	28.6	K
9.0	41.5	28.8	K
9.5	46.4	10.5	
9.5	53.3	20.5	
9.8	56.8	16.5	
9.5	7 3.7	38.1	
9.4	16.3	24.0	
9.8	19.7	5.4	
9.1	27.3	35.5	M
9.2	31.7	44.6	

5421—5480

	20h	—6°	
m	m s	′	
8.5	7 32.2	42.6	K
9.7	36.4	4.5	
9.7	48.3	0.2	
9.8	56.2	57.2	
10	8 47.4	29.5	
9.8	50.6	19.1	
9.0	9 11.2	57.4	M
9.5	17.7	28.4	
9.8	18.8	16.1	
9.8	20.4	11.5	
8.7	32.5	0.1	K
9.7	32.5	27.8	
8.0	52.2	51.2	L
9.0	10 1.6	48.0	M
9.8	6.3	0.9	
9.8	12.6	43.5	
9.6	13.4	51.0	
9.5	13.7	35.5	
9.7	13.8	39.5	
7.8	29.6	45.8	K
9.7	51.8	33.1	
9.5	11 7.3	29.0	
9.6	8.4	40.8	
9.5	10.5	30.3	
9.6	12.9	24.8	
9.5	13.7	35.0	
9.6	24.6	21.2	
8.8	30.9	17.4	K
9.5	12 6.8	1.0	
8.7	36.2	7.6	K
6.3	42.1	48.7	K
9.5	51.5	51.0	
9.1	56.5	3.1	
9.3	56.5	10.5	
7.3	13 24.7	48.4	K
9.5	28.0	13.6	
9.2	44.8	2.5	M
8.7	14 15.7	8.2	K
10	17.0	7.6	
9.4	30.6	23.1	
9.8	57.2	19.0	
8.2	15 18.5	8.1	K
9.1	28.6	24.6	R
9.4	31.5	33.0	
9.2	16 12.8	34.3	M
9.5	23.3	12.3	
9.5	57.9	11.5	
9.8	17 1.0	52.9	
9.6	6.3	57.5	
9.1	11.7	14.4	
9.0	23.6	56.8	Sj
9.6	26.8	6.9	
9.8	47.7	50.9	
9.6	52.9	30.4	
9.3	55.8	33.5	M
9.8	18 8.3	56.1	
9.1	25.3	53.2	
8.7	28.1	20.9	L
8.0	39.7	37.5	K
10	45.6	20.7	

5481—5540

	20h	—6°	
m	m s	′	
9.3	18 46.5	10.0	
9.5	19 13.3	12.0	
10	23.3	7.2	
9.8	42.4	2.6	
9.1	46.0	10.0	M
9.6	47.3	3.1	
7.3	20 4.8	7.5	L
8.6	12.4	0.0	M
9.8	18.0	18.8	
9.5	31.6	27.6	
9.8	38.0	31.4	
9.0	51.3	1.5	Sj
9.0	52.3	6.7	Sj
9.8	21 1.1	11.3	
9.4	3.2	50.5	
9.4	31.7	47.7	M
9.5	33.9	9.2	
9.4	22 23.9	0.7	K
9.9	27.2	50.2	
9.8	28.8	1.7	
9.6	46.0	59.6	M
9.8	46.2	35.0	
9.0	56.8	12.7	Sj
8.4	57.5	17.9	M
9.0	59.7	21.7	M
9.8	23 29.0	51.7	
9.8	34.9	25.7	
9.9	43.8	5.6	
9.8	24 2.3	59.1	
9.5	5.8	57.5	
8.0	15.9	5.4	K
9.0	33.7	47.7	
9.6	44.1	27.7	
9.5	44.6	24.2	
9.6	25 8.8	44.6	
9.2	12.5	25.7	M
9.0	35.5	28.2	Sj
9.9	35.8	2.7	
9.6	39.6	6.5	
9.8	39.6	39.0	
7.3	42.7	42.4	M
10	26 38.0	0.8	
8.6	51.2	20.4	Sj
10	58.1	35.4	
8.7	58.3	46.3	K
9.8	27 3.4	56.7	
8.5	41.6	47.0	K
8.0	42.2	1.0	K
9.2	28 1.4	8.8	
9.4	41.7	20.5	
9.8	29 4.3	13.9	
9.8	37.8	38.0	
9.3	51.9	55.5	Sj
9.7	57.7	27.1	
9.4	30 14.2	51.4	
9.3	18.9	35.6	
9.8	22.9	2.5	
9.0	34.0	25.3	
9.8	47.5	22.1	
9.6	53.4	57.1	

5541—5600

	20h	—6°	
m	m s	′	
9.7	30 59.3	30.5	
9.3	31 20.3	35.1	
10	24.9	4.5	
9.8	26.1	11.6	
8.6	28.1	39.6	M
8.2	35.3	41.6	Sj
9.8	55.9	59.5	
9.6	32 14.7	29.4	
9.7	18.3	29.0	
8.8	29.6	21.6	K
9.5	31.8	48.7	M
9.0	32.4	18.1	K
9.8	37.8	27.8	
9.5	39.3	48.7	
9.5	57.3	38.0	
9.6	33 12.8	22.1	
9.5	37.4	52.7	
7.7	42.7	30.9	K
9.8	34 0.5	1.0	
9.4	16.1	23.4	M
9.5	35.3	21.8	
9.8	35 1.4	55.0	
9.5	8.4	20.0	
8.8	16.4	53.6	Sj
9.2	33.5	1.3	
8.6	42.3	44.5	Sj
8.2	36 12.4	28.4	L
7.5	16.5	6.9	Sj
9.8	38.2	16.3	
9.1	40.9	19.8	M
9.5	37 15.9	53.0	
9.8	17.4	53.6	
8.2	33.9	40.7	K
9.5	45.5	12.7	
9.3	48.4	26.2	
9.5	50.9	24.8	
9.8	38 0.8	3.1	
8.6	18.3	49.3	Sj
8.8	59.7	30.5	K
9.8	39 19.7	30.1	
9.8	24.0	9.8	
9.5	37.0	54.6	
9.5	37.4	13.8	
9.4	49.5	58.4	
10	56.0	43.8	
8.9	40 2.7	34.1	
8.7	26.9	44.4	K
8.3	28.4	33.0	M
9.1	41 2.0	28.3	M
9.4	17.9	17.3	
9.5	19.0	44.2	
9.9	21.8	55.9	
10	26.0	9.8	
9.5	39.5	9.2	
10	53.4	13.8	
9.5	55.4	30.2	
9.5	42 12.4	57.1	
9.3	23.0	7.2	
10	51.8	8.6	
8.5	55.4	25.0	K

5360: $34^{s}.66$ $59'36''.2$ B_1, Ep. 1883.65

5601—5660				5661—5720				5721—5780				5781—5840				5841—5900			
20h		—6°		20h—21h		—6°		21h		—6°		21h		—6°		21h		—6°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.8	42	55.6	1.0	8.5	55	59.2	48.7 M	9.4	7	34.5	3.5	8.2	26	7.9	3.6 K	9.5	41	56.0	42.0
9.8	43	36.7	58.6	9.5	56	19.6	11.7	8.2		44.3	36.2 K	9.0		16.6	7.5 K	9.2	42	23.4	58.6 Sj
9.1		39.5	8.2 K	9.5		20.7	42.5	9.8		47.2	23.4	9.9		32.6	44.8	9.5		25.3	16.9
6.5		44.8	9.7 K	6.0		24.0	23.4 K	9.4		47.9	46.7	9.9		38.0	39.8	9.4		26.7	35.6
8.2	44	20.2	28.8 M	9.6	57	1.9	20.4	8.6		51.4	3.9 K	9.4	27	50.5	32.3	9.5	43	4.2	22.3
6.0		29.3	2.8 K	9.4		35.3	32.2 K	10	9	33.0	0.5	9.8		55.6	15.5	9.8		8.6	58.3
9.4		52.5	22.5	9.1		42.0	43.2 Sj	9.9		43.4	13.6	9.6		55.8	21.6	9.5		11.7	18.0
8.5		56.1	27.9 M	9.5		50.2	51.2	10		50.4	8.3	9.4	28	48.2	24.4	9.5		49.5	1.5
9.8		56.7	0.2	9.5		57.7	5.7	8.5		56.5	4.2 K	9.3		49.1	38.9 M	9.4		59.2	24.5
9.5		57.8	2.9	8.5		58.1	15.7 K	7.5		58.9	23.3 Sj	8.2	29	8.6	39.1 Sj	8.5	45	1.3	2.8 K
9.5	45	2.6	34.7	9.3	58	10.2	43.6	8.9	10	29.4	44.9 K	10		19.6	32.3	9.4		10.2	23.6
9.6		19.3	8.4	9.0		27.8	43.5	9.7	11	38.0	25.8	9.4		20.4	55.8	9.8		12.5	27.1
9.2		31.0	17.2	9.0		36.3	50.7 K	8.0	12	2.5	5.9 Sj	9.8	30	2.7	6.9	9.5		30.3	13.6
9.3		36.0	15.2 M	8.3		38.2	7.6 K	9.5		3.0	40.7	9.8		22.1	48.0	9.6		34.7	14.8
8.9		51.6	47.2 M	9.8		42.7	45.6	9.0		9.3	37.9 K	9.6		47.2	18.2	9.5		38.2	29.8
9.5	46	14.7	57.0	8.9		47.8	20.4 K	9.9		19.7	0.5	9.6		53.2	10.7	9.6	46	1.4	34.5
9.5		22.8	56.5	9.8		48.0	36.4	9.9		24.0	12.3	9.7	31	24.2	26.8	10		20.3	51.6
9.8		23.1	33.7	9.3	59	0.0	8.3	9.1		38.0	31.1 M	9.5	32	3.4	32.0	9.8		22.4	57.9
8.2		55.6	0.8 K	9.3		0.2	17.6 M	10		43.0	3.7	9.1		20.0	2.8 R	7.3		35.1	2.3 K
9.3		57.0	18.5	9.3		25.7	6.5	9.2	13	46.4	56.7	9.9	34	23.0	39.6	9.6		49.7	54.1
9.5		57.7	50.1	9.5		28.1	13.0	9.5		51.9	24.6 M	8.9		26.2	34.0	9.5		56.9	20.0
9.5		57.7	30.0	10		42.1	13.0	9.5		55.2	9.6 M	9.4		27.2	40.2	9.5	47	7.3	8.2
9.7	47	9.3	47.2	7.8	0	2.7	9.0 Sj	7.0	14	58.5	15.0 K	9.5		28.4	36.9	9.5		53.9	42.9
9.2		22.4	1.5 M	9.3		12.6	27.9	9.8	15	18.0	39.2	8.5		43.9	17.9 Sj	9.8		58.9	50.1
9.5		32.7	57.0	9.4		43.7	19.6	8.3		19.3	51.2 M	9.7	35	14.7	5.0	9.3	48	16.8	36.0 M
9.2		38.5	18.3	9.5	1	3.6	18.5	9.7		35.9	30.2	9.4		31.9	7.8	9.7		24.1	49.0
9.1		45.5	35.0 M	9.4		6.3	45.3 Sj	9.9	16	0.6	2.7	9.5		47.3	59.6	7.3		29.3	30.9 B
10	48	1.9	7.2	9.3		12.7	17.8 M	9.9		18.9	23.0	9.4		47.6	44.4	9.5		29.9	49.5
9.6		15.1	50.5	7.8		14.9	54.8 M	9.4		36.5	19.8	9.8		52.7	11.4	9.0		34.8	22.7
9.2		52.7	0.9 Sj	7.0		18.6	9.9 K	7.3	17	4.0	12.0 Sj	9.5	36	18.7	47.4	8.8		48.1	8.6 K
9.8		54.8	33.3	9.4		54.4	57.6	9.7		7.5	43.5	10		48.7	52.0	9.4		51.8	27.9
9.6	49	13.0	20.8	9.8		57.4	58.0	9.5		21.0	6.9	8.7		56.2	9.8 M	9.5	49	7.1	25.9
9.5		13.1	32.5	9.4	2	19.3	5.0	9.7		27.8	32.7	9.2	37	12.6	31.7	9.4		10.8	28.7 M
9.1		23.2	45.0	9.0		21.8	40.5 K	9.0		28.7	19.4 L	9.5		31.5	56.0	9.4		18.6	44.3
9.8		50.1	12.1	9.5		34.8	49.7	9.9	18	27.5	13.3	9.5		34.2	7.5	9.6		18.9	45.9
9.7	50	14.7	0.3	9.6		35.3	16.5	9.8		36.2	52.3	9.1		44.2	9.6 M	9.5		43.9	49.0
8.6		24.2	44.1 Sj	9.4		56.4	11.1 Sj	8.0		56.6	37.8 K	9.5	38	12.2	24.4	9.2		53.8	37.7
9.1		50.1	7.4	9.1		57.9	19.8 M	10	19	1.1	15.8	9.3		17.1	38.6	6.5	50	36.9	6.5 K
9.6	51	10.9	35.4	8.7	3	0.8	21.3 Sj	9.0		13.2	26.5 K	8.8		29.3	57.7 K	8.7		47.4	50.6
9.2		17.5	23.5	9.7		9.3	49.8	8.5	20	15.6	1.4 K	10		31.6	33.0	9.5		57.4	18.9
8.8		33.2	48.6 M	9.6		9.4	6.6	8.8		23.5	15.4 Sj	9.6		36.7	10.2	8.6	51	43.1	10.4 K
9.1		52.3	30.4 M	9.9		25.5	6.9	9.5		48.1	15.9	8.5	39	4.0	46.6 Sj	9.4		45.2	27.9
9.1	52	0.7	47.9 M	9.9		34.8	27.9	9.8		52.0	39.4	9.0		4.0	45.0 K	9.2		53.4	28.3 M
9.0		23.7	47.3 M	9.6	4	5.9	5.4	9.3	21	2.5	39.4	9.4		6.5	0.3	8.0	52	2.0	58.0 K
9.1		26.6	14.6 Sj	8.3		18.6	33.4 Sj	9.6	22	4.4	30.2	9.4		17.5	36.8	9.5		5.2	56.0
8.8		27.9	6.2	7.8		18.8	24.1 K	8.5		23.9	2.0 K	9.8		48.7	15.3	9.2		25.9	16.4
9.5		41.6	11.5	9.1	5	1.9	49.8 M	9.1		34.1	7.1 K	6.2		59.6	35.0 B	9.3		26.7	16.6
9.1		49.6	22.0	9.5		3.6	7.8	9.5		48.0	39.8	9.5	40	9.6	28.9	8.9		27.9	32.7 R
9.2		50.2	20.5 Sj	9.4		37.8	40.5	9.7	23	15.4	21.8	9.5		18.6	28.6 M	9.5		39.6	33.8
6.5		53.1	2.4 K	9.8		43.9	50.3	3.5		56.1	12.6 L	9.1		22.2	47.8	9.2	53	2.9	21.6 R
9.4	53	7.4	5.3	9.4		47.9	1.9	9.7	24	9.1	20.6	10		31.8	42.6	9.5		24.4	14.0
9.3		9.2	1.3	7.5		50.2	30.6 Sj	9.2		21.5	49.7 K	10		38.3	39.1	9.5		51.9	12.9
9.8		58.9	33.4	9.6	6	3.7	45.7	9.8		36.6	47.0	9.5		56.0	47.3	8.0		59.0	54.6 Sj
9.5		59.0	26.1	9.4		9.1	5.0	9.5		48.5	33.8	7.8		56.4	55.3 Sj	9.7	54	19.2	21.1
9.8	54	38.2	48.5	9.2		27.8	24.0	8.5		50.9	56.9 K	9.6		59.3	1.4 M	9.6		19.4	16.0
9.8		56.3	29.8	9.8		29.4	55.3	9.5	25	12.1	52.5	9.5	41	4.7	32.8	9.3		25.2	27.5 M
9.0	55	2.1	3.7 K	9.5		40.8	37.9	9.5		13.0	26.3	6.8		26.4	4.4 Sj	9.3		29.2	26.2 R
9.4		29.7	47.6	9.7		50.9	8.8	10		26.2	2.1	9.4		34.3	52.2	9.4		36.1	59.1
8.7		32.7	44.0 Sj	8.2		55.4	33.6 Sj	9.1		30.5	37.3 M	9.9		39.7	27.7	10	55	7.9	59.9
9.5		55.7	0.9	7.0	7	24.9	8.7 K	9.3		51.7	3.8	9.1		43.5	54.2 K	9.8		53.5	46.7

5683: 2:68 9′15″.5 B_4, Ep. 1871.72 5731: 27:89 45′14″.3 B_1, Ep. 1883.64

5901—5960					5961—6020					6021—6080					6081—6140					6141—6200				
	21h—22h		—6°			22h		—6°			22h		—6°			22h		—6°			22h—23h		—6°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
7.5	55	53.9	23.6	K	9.8	9	44.0	48.0		9.0	27	6.7	27.5	M	9.5	44	25.1	25.6		9.2	57	7.8	16.9	WC
8.0		54.9	35.2	K	9.8		50.9	22.2		9.4		16.6	53.5		10		29.9	27.6		9.0		41.3	1.9	
9.3	56	49.5	46.0	M	9.5	10	35.8	8.3		9.8		25.0	25.0		9.6	45	9.1	28.5		10	58	2.7	43.6	
8.8	57	4.5	45.8	M	8.2		40.4	33.9	Sj	9.5	28	8.5	31.3		9.5		27.5	59.8		10		28.8	59.3	
9.3		24.2	32.6		9.3		40.7	4.9		10		9.4	28.7		9.0		40.4	6.6	K	9.8	59	33.4	31.2	
9.9		50.9	8.0		9.5		45.0	47.9		9.1		39.0	26.1		9.0		53.9	6.9	Sj	9.5	0	9.4	28.4	
9.9	58	16.4	16.7		9.5		49.5	29.6		9.3		44.6	22.4		7.0		55.8	45.3	K	8.7		20.5	29.0	Sj
7.5		29.0	3.5	K	9.5	11	32.3	15.2		8.8		46.1	21.0		8.7	46	5.4	52.7	B	9.1		30.0	0.2	
9.9		58.0	2.2		9.1		39.1	35.2		10		52.6	56.2		9.7		31.1	32.9		10		37.6	47.7	
9.0	59	9.8	38.1		9.5	13	5.4	19.0		9.5	29	16.5	28.3		9.0		37.2	16.2	K	10		56.7	49.0	
9.4		30.0	45.8		9.2		44.0	52.1	M	9.6		21.3	16.3		9.5		37.3	39.0		9.9	1	9.3	15.0	
7.8	0	5.8	31.7	K	7.5		48.8	57.9	L	9.5		31.8	22.7		10		56.9	0.6		8.5		31.4	7.7	K
9.5		11.8	38.1		9.3	14	11.2	33.5		9.2		39.2	7.6	K	9.8		57.8	7.7		9.2		42.9	40.0	
8.2		18.3	12.5	Sj	8.0		11.6	54.5	K	7.8		44.1	49.1	K	9.5	47	26.7	37.3		9.7	2	16.6	7.8	
9.6		59.8	25.7		9.5		13.9	12.1		9.4		58.9	35.7		10		45.4	22.2		9.6		17.4	22.0	
9.8	1	23.5	50.8		9.5		53.5	19.7		9.1	30	20.6	49.5	R	7.7		49.5	27.7	K	10	3	1.4	18.3	
9.5		26.4	31.9		9.4	15	14.6	34.1		9.7		59.3	58.3		9.4		54.9	20.5		7.0		8.7	44.7	Sj
8.7		36.7	19.2	Sj	9.8		18.0	21.2		9.1	31	2.5	38.2	R	9.0		59.4	21.1	K	10		32.7	35.3	
9.2		49.1	52.8		9.3		25.6	35.6		9.5		3.7	48.0		10	48	25.2	6.9		10		33.2	17.5	
9.5		56.0	33.5		9.4		26.3	29.9		9.5		20.9	36.2		8.8		49.0	0.9	Sj	10		40.6	17.8	
9.2	2	10.6	0.2	M	10		59.9	9.0		9.5		22.1	36.5		9.7	49	7.3	58.9		10	4	6.9	15.8	
10		22.2	3.2		9.8	16	29.4	0.6		9.8		29.2	1.2		10		24.3	10.9		10		28.7	36.2	
10		49.0	52.9		9.1		32.2	44.2		9.4		53.7	6.4		9.6		43.6	6.2		9.5		29.1	13.3	
9.6	3	1.8	31.7		8.9		46.3	56.9	K	9.5	32	0.2	43.7		10		58.5	46.4		9.5		33.5	51.6	
9.0		37.1	35.8	Sj	8.5		51.7	45.9	K	10		27.5	24.0		10		59.0	33.8		9.5	5	27.0	15.8	
10		51.3	59.2		9.7		59.0	25.7		9.3		58.6	35.1	R	10	50	4.6	46.7		10		51.9	59.8	
10	4	0.0	56.2		9.5	17	13.3	48.4		9.5	33	24.3	27.4		9.4		18.7	38.9		9.1		53.8	38.8	M
8.5		20.4	15.0	Sj	9.1		24.4	20.1		9.5		27.0	39.1		9.0		21.4	18.8	K	9.7	6	1.3	47.3	
9.5		37.3	16.7		9.1	18	9.0	28.7		9.3		33.0	34.1	K	10		22.3	3.0		9.7		42.9	45.8	
9.7		40.2	29.6		9.7		11.8	5.8		10		34.0	46.0		8.5		38.2	27.7	K	5.0		48.5	49.8	B
9.5		56.9	44.6		9.5		17.8	10.9		8.9		51.9	24.9	K	10	51	1.7	58.0		9.0	7	5.1	54.4	K
9.6	5	1.7	30.7		9.7	19	0.8	11.3		8.7		54.3	55.4	M	8.8		4.7	26.8	K	10		12.6	5.7	
9.6		10.6	47.9		9.2		8.3	52.1		10	34	18.1	36.0		9.3		6.7	40.0		9.1		24.5	10.0	Sj
9.5		15.1	52.9		9.8		32.8	14.1		9.7		24.7	13.3		9.5		7.5	41.3		8.2		42.1	54.7	K
9.9		28.2	26.1		9.0		47.4	46.2	K	9.4		37.8	8.5		9.5	52	11.8	15.2		9.7		53.5	19.8	
9.0	6	9.6	22.9	K	8.0	20	17.4	38.6	K	9.2		43.3	29.4		8.9		15.1	34.6	B	10		59.9	45.1	
9.4		24.3	10.7		8.6		25.4	40.5	K	9.8		57.7	55.5		9.6		34.3	53.0		9.0	8	11.3	29.2	K
7.7		38.9	28.1	Sj	9.8		36.1	50.4		9.4	35	9.2	16.1	R	9.4		38.2	51.4		9.0	9	9.0	45.9	Sj
9.5		42.5	56.2		10		54.0	43.0		9.7		15.3	59.9		9.5		44.3	10.2		9.4		10.0	30.1	
8.5		45.3	16.9	K	9.5	21	15.5	29.9		9.1		21.5	58.1	M	9.0	53	15.2	20.3		10		21.8	23.6	
10		47.8	3.5		9.5		44.9	53.5		9.5		22.6	37.6		8.8		31.1	28.2		9.4		36.5	20.5	
9.1		54.2	59.5	K	9.1		51.9	42.2		10		46.5	34.2		10		42.6	52.1		9.3		42.7	55.3	
9.4		59.1	42.1		9.6	22	8.3	28.6		9.1	36	7.2	2.0		9.5		45.3	51.8		9.2		52.7	54.2	
8.2	7	11.5	36.0	L	9.5		15.7	34.4		9.1		15.3	12.3		10		48.8	23.8		8.8	10	16.5	21.3	WC
9.4		12.4	32.3		9.6		17.3	4.2		10		47.9	48.2		8.5		59.8	18.5		8.9		26.5	18.2	K
9.5		33.8	2.4		9.4		23.8	48.4		10	38	29.9	13.9		9.1	54	14.2	6.3		9.1		53.5	11.2	Sj
8.1		37.9	18.0	Sj	9.5		34.3	2.8		9.1		37.8	11.4		8.6		22.7	44.5	WC	8.9	11	14.6	25.4	K
9.6		42.2	32.2		9.7		53.7	30.9		8.8	39	16.7	42.0	Sj	10		53.5	36.0		9.4		56.4	37.8	
10		59.8	21.1		9.9	23	5.2	34.2		9.5		49.8	53.4		9.0	55	7.1	30.5	Sj	10	12	9.9	48.7	
9.1	8	5.4	23.1	K	9.6		26.6	25.2		9.5	40	6.8	8.5		9.7		8.9	52.9		10		21.8	10.3	
9.4		12.9	24.7		9.5		50.3	13.7		9.2		22.8	10.2		9.5		18.7	52.4		6.5	13	12.0	41.7	L
9.8		23.7	6.6		9.5		57.9	57.8		9.5		30.3	50.5		9.5		29.4	49.8		10		44.0	41.1	
9.8		50.5	26.2		9.5	24	52.4	35.5		9.5		40.8	17.7		9.2		31.6	37.2	K	8.1		45.2	59.0	K
9.1	9	2.2	52.0		9.8		56.5	57.8		8.5		45.4	31.9	M	9.4		38.8	31.2	K	9.1		53.1	44.9	K
9.5		5.8	9.1		9.5	25	1.6	9.1		8.7		56.2	3.6		10		44.6	28.4		10	14	12.1	28.4	
9.5		12.6	51.1		9.5		1.9	42.6		9.0	41	2.5	21.5		10		53.6	9.2		10		17.0	37.5	
9.5		13.1	20.0		10		40.8	27.4		9.5	42	18.3	4.3		9.8	56	13.8	25.4		9.6		42.1	29.7	
9.7		21.4	20.3		9.7	26	11.9	28.1		9.2		31.9	20.4	M	9.1		21.8	13.4	WC	9.5	15	27.0	39.7	
9.5		21.5	6.8		9.7		54.1	2.4		8.8		42.9	21.8	Sj	8.7		41.8	33.3	K	10		59.7	6.4	
5.5		32.3	6.4	Sj	9.6		55.2	7.6		9.5	44	6.8	2.3		8.8		57.0	57.7	K	9.9	16	10.6	25.7	

6170: gelbroth

6201—6230

	23h	−6°	
m	m s	′	
9.1	16 42.1	32.5	K
9.3	17 11.1	12.3	
9.3	14.4	48.2	
8.9	31.5	0.4	K
9.9	49.3	20.5	
9.1	18 5.2	48.5	Sj
9.4	8.1	29.8	
9.5	15.6	0.9	
9.8	23.6	59.8	
10	28.0	1.7	
9.5	35.3	55.0	
10	50.1	45.6	
8.2	19 10.3	1.6	K
9.3	41.2	23.4	
9.5	50.1	20.3	
9.3	20 27.1	17.0	
9.5	33.1	30.3	
8.5	47.6	37.1	Sj
10	52.1	5.6	
7.0	21 18.2	11.1	K
9.9	23.3	30.6	
9.1	22 11.7	11.1	
9.5	20.7	19.8	
9.5	30.6	5.3	
9.1	44.2	6.2	
9.8	23 27.2	7.8	
10	49.8	52.3	
9.9	24 30.5	43.6	
8.6	25 8.2	56.4	K
9.6	27.8	28.6	B

6231—6260

	23h	−6°	
m	m s	′	
9.5	25 52.2	7.5	
9.6	26 23.5	43.3	
9.3	32.0	41.9	
9.2	42.2	17.5	K
10	27 2.6	43.7	
9.7	18.3	10.8	
10	27.2	48.4	
10	51.0	13.0	
8.8	28 18.4	32.9	K
9.0	20.4	26.2	K
9.8	22.3	20.6	
9.1	26.8	48.8	Sj
9.2	52.4	25.5	
10	29 20.9	57.8	
9.8	32.0	36.0	
10	48.6	12.5	
9.1	30 2.3	5.9	
8.2	23.6	46.8	K
9.3	29.2	5.0	
9.5	50.7	48.3	
8.9	31 5.6	47.6	Sj
9.3	47.1	45.0	
8.9	56.8	15.6	K
8.8	32 4.3	24.9	K
10	17.7	48.2	
7.3	23.4	20.6	K
9.1	40.3	8.7	
9.5	53.2	28.3	
9.8	33 50.3	1.8	
9.7	34 0.9	34.4	

6261—6290

	23h	−6°	
m	m s	′	
8.9	34 14.3	18.6	K
7.8	24.2	46.9	Sj
9.3	56.9	10.5	
9.8	35 3.6	29.8	
9.8	26.8	58.3	
9.7	58.8	51.3	
9.7	36 4.0	20.9	
9.1	23.3	46.2	
8.8	25.5	14.0	K
9.5	27.6	30.4	
9.1	33.1	0.5	
9.7	51.9	57.3	
9.0	58.0	35.2	K
9.5	37 9.5	55.3	
9.1	10.2	41.2	Sj
8.7	12.4	55.9	K
9.5	38.3	3.4	
9.8	43.8	48.2	
10	38 0.7	37.7	
9.3	4.4	3.4	
10	24.5	22.4	
9.1	26.2	44.2	K
9.8	55.3	47.8	
9.2	39 0.6	31.8	R
9.5	11.5	23.6	
8.5	16.9	15.6	K
10	35.5	33.3	
10	43.8	48.9	
9.0	51.7	9.1	K
9.5	56.4	52.8	

6291—6320

	23h	−6°	
m	m s	′	
7.8	40 10.8	38.0	Sj
10	20.9	57.4	
8.2	25.4	2.8	K
9.5	41 7.2	36.4	
9.5	11.5	16.6	
9.0	16.5	13.5	
8.0	42 5.8	21.5	K
9.7	5.8	39.3	
9.8	55.0	25.0	
10	58.5	8.7	
9.7	43 26.8	40.6	
9.3	35.4	26.2	
8.7	44 19.1	29.2	K
9.2	21.3	18.9	
9.1	35.6	24.5	K
9.1	43.7	26.2	K
9.4	55.5	4.1	
9.2	45 10.4	48.2	
9.0	42.1	8.4	
9.8	59.1	14.0	
9.5	46 36.6	11.3	
9.5	40.1	16.5	
8.9	55.1	31.9	K
9.3	47 50.0	3.0	
10	57.2	27.8	
10	57.8	37.8	
10	48 8.4	10.4	
9.6	16.6	56.7	
9.5	21.9	21.3	
9.3	23.4	21.6	

6321—6350

	23h	−6°	
m	m s	′	
9.5	48 39.1	13.0	
8.7	49 0.9	47.3	Sj
9.8	32.1	9.0	
8.0	43.0	16.0	K
9.2	48.1	57.2	
9.4	56.0	54.6	
9.5	50 0.1	19.6	
9.4	1.6	21.6	
7.7	21.7	15.7	K
9.5	35.1	10.0	
9.1	58.5	47.8	
9.8	51 30.0	46.9	
9.6	37.0	48.5	
9.4	41.8	0.9	
7.0	52 13.9	41.8	Sj
10	19.6	56.4	
8.5	34.7	18.1	K
9.6	47.0	39.6	
9.9	48.0	45.6	
9.7	53 16.5	48.9	
8.0	36.5	38.2	K
8.0	41.0	40.6	K
9.5	54 12.9	28.4	
9.1	23.8	19.0	
5.0	30.6	49.2	Sj
8.3	34.1	1.3	
9.7	34.3	19.9	
8.7	58.6	52.0	K
10	55 46.8	13.1	
10	48.5	35.2	

6351—6355

	23h	−6°	
m	m s	′	
9.0	55 51.3	16.2	K
10	56 19.0	39.5	
9.8	29.3	1.2	
9.9	31.8	0.6	
10	40.4	3.7	

6356—6360

	23h	−6°	
m	m s	′	
9.2	57 32.4	23.3	
5.2	54.3	30.9	K
9.8	57.4	25.7	
9.4	58 36.3	30.9	
9.4	44.4	18.7	

6361—6365

	23h	−6°	
m	m s	′	
9.3	58 52.9	15.8	
10	54.8	39.0	
9.3	59 19.4	33.3	
10	25.3	36.4	
10	27.6	8.6	

Zone —7°

1—40					41—80					81—120					121—160					161—200				
	0h		—7°			0h		—7°			0h		—7°			0h		—7°			0h—1h		—7°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.9	0	30.0	14.8		9.5	14	33.0	40.4		9.5	26	45.3	0.1		9.3	39	23.7	8.1		9.8	54	42.5	34.7	
9.8		39.9	54.9		9.8		49.1	54.3		7.7	27	5.3	18.1	K	9.1		54.8	21.5		9.5		45.5	15.0	
7.8	1	5.4	35.8	Sj	9.0	15	10.8	26.9		9.7		27.5	6.5		9.5	40	16.1	51.8		9.4		46.3	11.3	
9.9		7.7	15.7		9.1		11.6	7.9	M	8.8		43.3	46.1	Sj	9.2		23.5	56.7		9.4		51.7	51.9	
9.5		18.5	20.2		9.7		32.1	21.0		9.1		58.5	11.4		9.9		49.8	58.4		8.7	55	6.0	28.8	K
10		19.9	16.4		9.2		35.3	16.8		9.7	28	20.2	30.7		9.5	41	21.0	19.7		9.6		51.6	39.1	
10	2	7.4	16.0		8.5		36.4	10.3	K	9.9		43.0	4.3		9.5		22.9	28.2		9.1	56	1.5	19.3	
9.9		19.2	20.9		7.6		37.0	15.9	Sj	9.1		44.2	36.8	M	9.7	43	15.8	10.7		10		43.2	0.3	
8.2		23.4	38.8	K	10	16	7.2	14.7		9.5	29	8.7	35.5		9.1		56.6	43.8		9.2		58.1	14.9	
9.8		27.1	58.3		9.4		8.7	59.7		8.3		33.6	21.4	K	8.6	44	34.9	54.7	M	10	57	18.7	47.8	
9.1		57.0	50.1		9.6	17	40.3	25.1		9.7	30	0.5	30.4		9.8		39.6	11.2		9.6	58	15.1	46.5	
9.7	3	3.2	23.0		9.8		43.3	22.4		10		35.7	28.1		9.4	45	5.4	25.7		10		20.5	51.7	
9.9		37.4	14.8		10		59.4	40.6		10		39.2	8.5		9.4		20.1	45.8		8.9		28.8	28.8	
10	4	2.5	41.3		9.6	18	11.5	13.3		9.1	31	5.8	37.5		9.8		34.2	46.5		9.2	59	13.1	20.6	
9.6		28.2	59.0		9.4		45.2	21.2		9.8		51.4	45.9		10	46	15.2	46.2		9.0	0	19.2	2.2	
8.4		40.8	53.6	K	9.5	19	25.3	34.9		9.5	32	30.5	49.0		10	47	20.5	17.8		10		43.7	55.0	
9.0	5	21.3	50.3	K	9.1		43.4	24.5	K	9.5		38.7	53.6		9.5		36.0	58.4		10		49.5	56.6	
8.5		29.0	43.0	K	10		52.9	6.4		9.7		42.3	40.5		8.6		56.1	7.4	Sj	9.3		52.1	34.8	
9.9	6	43.8	44.2		10	20	20.3	34.1		9.7	33	10.1	16.7		10	48	1.7	46.7		10	1	7.4	3.8	
9.1		48.2	53.5		9.5	21	3.7	48.8		9.6		19.6	22.4		9.8		3.1	36.8		10		15.5	55.2	
10	7	12.5	27.3		10		22.1	17.5		9.5		28.1	0.0		10		3.7	47.6		9.3		53.8	15.7	
9.1		33.2	10.1		10		32.8	42.1		8.4		33.9	54.7	K	9.0		8.6	11.8		9.4		54.5	1.1	
9.3	8	8.2	33.8		8.7		59.2	18.9	L	9.6	34	14.2	14.4	WC	9.5		10.8	52.8		9.1	2	13.5	28.3	
10		15.2	16.0		9.0	22	14.6	37.9	K	9.7		26.0	11.3		10		12.4	14.6		10		23.6	55.8	
10		23.1	13.0		9.4		16.1	41.4		9.4		40.1	58.6		9.9		54.9	32.0		8.8		42.9	50.2	
9.1		28.7	44.5		10		18.7	4.6		8.5		49.6	2.5	L	8.1	49	6.6	30.2	K	9.7		46.8	53.7	
10		46.2	30.8		8.9	23	0.4	3.9	L	8.7	35	16.4	39.6	Sj	9.0		9.8	22.8		8.9		53.6	34.3	K
10		56.2	25.7		9.3		8.0	20.2		10		56.8	18.0		9.6		40.0	43.6		10	3	1.7	33.0	
8.5		57.5	50.0	K	9.7		10.2	17.2		7.8		57.4	7.8	K	10		58.3	8.0		9.7		2.4	19.4	
9.4	9	9.9	0.9		10		21.2	10.8		9.0	36	10.8	12.2	Sj	10	50	24.5	30.1		8.8		37.0	26.0	K
9.5		24.2	10.2		9.8	24	0.0	26.8		9.5		16.9	37.1		9.7		45.9	57.8		9.5		41.3	41.7	
8.6		28.6	59.8	Sj	9.0		25.7	37.8	K	9.1		50.2	16.8		9.8	51	0.8	28.4		8.5		50.2	56.5	K
9.2	10	30.2	22.9		8.5		34.4	7.2	Sj	9.7		52.3	23.4		9.1		11.1	45.9		9.0	4	1.8	45.9	K
9.5		46.0	53.2		9.9		56.8	51.9		9.1		53.5	41.7		9.7		25.3	59.2		9.8		10.6	25.2	
9.3		49.7	22.0		8.9	25	11.9	0.9	M	9.8	37	31.4	34.0		9.8		33.9	26.6		9.8		55.1	25.4	
9.8	11	33.0	13.0		9.5		39.6	46.4		9.8		53.6	53.9		9.6		47.4	44.5		6.5	5	30.2	33.0	K
9.8		33.9	25.8		9.1		56.6	11.8	R	8.3	38	54.8	21.3	Sj	9.4	52	44.3	8.5		9.4	6	34.9	48.4	
10	13	4.5	22.0		9.9	26	8.2	44.3		8.6	39	5.4	28.9	K	9.4		51.1	38.2		9.1	7	15.7	30.7	
10		15.7	52.0		9.1		35.0	1.9		9.1		20.9	31.3		7.3	54	14.5	34.5	K	9.2		49.0	20.3	
9.8		32.2	13.8		8.5		39.4	53.4	K	9.1		21.7	38.2		9.5		29.3	5.8		9.7	8	21.5	21.1	

201—260

m	1h m	s	−7° ′	
9.2	8	41.9	52.1	
8.9		49.8	18.9	
9.8		52.5	32.0	
8.7		59.9	55.1	K
9.5	9	26.2	20.2	
9.5		28.7	37.0	
9.4	10	13.3	36.8	
9.5	11	14.1	26.4	
8.5		36.4	3.5	K
9.8		39.0	54.6	
9.0	12	9.7	21.8	
8.8	13	43.9	42.9	K
9.5		51.0	52.5	
9.3		51.7	13.4	
8.9		51.9	5.5	
9.7	14	7.2	28.1	
9.0		8.8	49.5	K
9.8		20.7	23.2	
9.4		39.2	58.0	
9.3		53.3	56.0	
9.2	15	0.5	51.4	
9.0	16	32.4	36.0	K
6.0	17	3.5	40.4	K
7.8		32.0	44.7	K
9.0		56.4	35.0	K
9.3		57.6	33.9	K
8.9		58.0	14.0	K
9.5	18	40.8	0.8	
8.0		50.2	24.6	K
9.7	19	20.4	6.0	
9.8		37.7	38.7	
8.7		43.5	5.8	K
9.9		55.1	52.5	
9.7	20	17.7	59.2	
9.5		21.0	10.7	
9.5		48.7	51.0	
9.0	21	5.5	43.8	K
10		47.5	59.3	
8.1		49.5	35.9	B
8.7	22	21.4	21.2	K
9.2		37.9	26.3	K
9.1		39.8	24.7	K
9.3		47.5	44.8	
9.1		50.1	16.6	K
9.8	23	3.4	35.9	
7.8		55.0	46.6	K
10		57.1	47.5	
9.7	24	4.8	37.0	
9.7		43.1	51.3	
7.6		44.4	28.3	K
10	25	30.7	38.6	
10		35.3	46.7	
10		37.0	14.0	
9.0	26	7.5	56.0	K
9.8		17.5	14.4	
6.1		25.2	45.7	B
8.5		59.4	1.0	K
9.8	27	20.3	16.6	
9.1		36.9	33.1	
9.5		39.3	53.0	

261—320

m	1h m	s	−7° ′	
9.5	28	7.2	20.0	
9.3		34.6	41.2	
9.6		43.5	35.6	
9.5		53.0	34.5	
8.7		53.1	8.3	K
9.8	29	9.2	41.0	
10	30	10.4	4.5	
7.8		17.9	29.7	K
8.5		53.8	23.6	K
8.7		56.1	39.0	K
9.8	31	17.5	14.8	
9.0		46.1	6.2	
9.5	32	20.3	20.9	
10		41.4	14.2	
9.0		59.8	21.6	K
8.2	33	32.2	20.6	K
9.2		44.4	27.6	
9.5		49.4	56.8	
9.3		50.1	48.2	
8.9	34	10.0	31.9	K
9.2		29.1	3.1	
8.2	35	8.5	29.0	K
8.7	36	6.9	49.1	K
8.4		7.7	48.2	K
9.3		17.9	26.7	
10		54.1	50.6	
7.0	37	28.3	30.0	K
8.3		28.4	23.7	K
9.6	38	12.3	55.8	
9.5		32.9	26.3	
8.7		49.4	10.3	K
10	39	25.6	45.8	
9.4		26.2	58.7	
9.4	40	2.5	54.7	
9.4		7.8	35.5	
9.0		22.4	25.0	K
10	41	1.1	33.1	
9.8		9.9	47.1	
9.5		23.1	55.4	
9.1		23.7	24.9	K
9.5		42.7	12.1	
9.6		45.2	59.1	
9.1		56.4	50.4	
9.3	42	0.8	45.5	
9.4		27.7	2.7	
8.5		45.6	26.1	K
7.4		58.5	25.2	K
9.7	43	34.8	25.7	
8.7		37.6	51.4	
6.8	44	23.2	35.2	K
9.8		59.8	9.2	
9.5	45	12.9	17.9	
10		14.7	30.0	
9.5		28.5	48.5	
9.5		53.1	0.3	
9.5	46	5.4	12.8	
9.6		53.6	25.8	
8.3	47	28.0	44.1	K
7.9		32.4	18.6	K
9.8		40.0	14.0	

321—380

m	1h—2h m	s	−7° ′	
9.8	47	43.1	47.9	
9.5	48	22.8	0.4	
9.0		35.6	10.4	
9.4	49	18.0	50.0	
9.5		27.6	26.8	
9.5		28.5	29.2	
9.2		45.9	40.7	
9.0		52.6	26.6	
9.8	50	10.3	34.7	
7.7		16.2	31.9	B
9.8		38.1	6.0	
9.4		39.1	29.8	
9.0	51	8.1	50.2	K
7.0		13.5	46.8	K
10		19.9	39.1	
9.3		41.8	32.5	
8.3	52	17.8	4.8	K
9.1		37.6	49.4	K
8.3		41.5	43.2	K
9.4		42.8	35.1	
9.8	53	14.9	36.2	
10		56.9	19.0	
8.3	54	12.4	14.7	K
9.6		15.7	54.0	
9.6		58.6	57.8	
9.8	55	18.4	54.3	
8.5		29.7	22.4	K
9.8	56	31.5	42.7	
9.8		50.2	46.4	
8.7		59.0	34.9	K
8.7		59.2	14.5	
9.0	57	6.9	8.6	
9.8		38.4	11.1	
9.8		48.3	6.4	
9.2	58	21.1	40.5	
8.8		44.7	51.7	
9.4		45.7	47.0	
10	59	32.6	17.5	
9.2		57.0	36.2	
10		57.1	40.2	
8.6	0	0.4	54.6	K
9.4		1.3	0.8	
8.8		14.9	3.2	K
9.8	1	11.6	45.0	
8.5		12.5	9.2	K
6.8		20.2	21.8	B
9.8		54.7	21.6	
9.9	2	7.4	31.1	
9.8		13.5	35.6	
10		17.3	55.2	
9.4	3	9.0	7.8	
8.5		11.1	41.2	K
9.9		16.9	7.3	
9.8	4	23.3	50.3	
9.8		25.0	35.6	
9.8	5	26.5	48.0	
9.9		44.2	43.1	
10		45.0	45.2	
9.4		45.0	4.2	
9.5	6	30.9	28.6	

381—440

m	2h m	s	−7° ′	
8.5	6	41.0	3.3	K
8.8		51.7	56.2	K
9.4		53.6	14.5	
9.1		57.5	30.6	
10	7	11.4	0.2	
9.8		29.9	0.2	
8.2		42.4	19.7	L
9.6		48.5	27.2	
8.5	8	9.4	47.8	K
9.4		38.2	38.5	
9.9	9	10.0	59.6	
7.5		44.3	15.2	B
5.5		45.1	5.2	K
9.5	10	33.6	36.5	
9.2		42.1	58.1	
9.5		54.9	10.3	
8.5	11	11.7	17.0	K
9.7		20.6	13.4	
9.1		31.6	11.2	
8.8		54.1	31.4	K
10		58.5	1.0	
9.1	12	10.8	44.1	K
9.4		12.9	50.2	
9.6		45.4	22.7	
9.5	13	7.8	17.7	
9.1		8.5	14.6	
8.0		18.6	2.5	K
9.1		33.8	57.7	
10	14	2.6	13.3	
9.0		30.1	32.6	K
8.5		33.8	18.5	K
9.6		34.0	8.5	
9.5	15	38.5	28.4	
9.1		42.4	16.1	
9.8		49.7	49.5	
10		51.6	8.8	
9.8	16	16.7	16.8	
9.5		49.1	4.5	
8.7	17	1.2	26.7	
9.5		1.5	5.8	
9.5		12.3	41.3	
9.8		14.3	33.8	
9.0		15.0	22.9	K
9.5		30.4	59.2	
9.3		53.7	31.3	
10	18	17.6	41.6	
10		42.0	15.0	
9.5		46.5	37.4	
8.5	19	28.6	38.2	K
9.7		32.5	59.5	
8.5		35.2	5.2	K
6.8	20	27.0	34.6	K
9.8		32.9	14.7	
9.7		33.6	36.4	
9.0		48.9	51.2	K
9.3	21	25.7	42.6	
9.1		32.8	48.0	K
9.8		57.3	10.0	
9.5	22	4.0	52.2	
9.0		12.3	43.0	K

441—500

m	2h m	s	−7° ′	
9.4	22	20.8	43.4	K
9.7		37.0	17.8	
9.7	23	17.3	44.1	
9.1	24	0.6	32.8	K
9.4		19.5	26.2	
9.5		20.3	28.3	
8.3	25	8.9	48.4	K
9.0		19.4	23.2	K
9.0	26	1.1	30.7	K
9.8		12.2	36.0	
9.5	27	9.0	1.6	
9.4		34.9	55.7	
9.5		49.2	33.6	
9.3		56.5	23.1	
10		56.8	5.8	
9.5	28	35.7	19.3	B
9.8		53.7	16.3	
9.3	29	42.7	29.1	
9.1	30	24.8	16.0	
9.4		33.5	17.5	
9.7		39.7	14.4	
9.8		49.6	49.0	
9.5	31	8.9	41.2	
9.4		32.2	35.8	
9.9		54.4	4.9	
9.3		59.0	14.6	
9.5	32	31.4	0.3	
9.4	33	30.2	29.8	
9.6		32.7	35.7	
9.9	34	29.8	28.8	
9.5	35	5.4	57.1	
9.0		8.2	48.5	
8.2		41.4	6.4	K
7.6		55.8	15.7	K
9.5	36	10.0	44.3	
9.4		11.6	48.7	K
9.7		36.4	59.4	
9.2		36.9	27.8	
8.5		42.1	48.8	K
9.8		48.9	9.0	
8.1		58.1	1.8	L
9.5	37	31.0	21.3	
9.5	38	27.2	26.6	
9.2		34.8	56.2	
9.4		40.4	13.3	
9.0		53.7	25.8	K
9.1		57.5	58.1	
9.7	39	23.8	58.0	
7.9		24.6	18.7	Sj
8.7		33.9	36.3	K
9.2		35.7	26.5	
9.8		43.8	6.0	
9.1		52.1	5.1	
9.5	40	14.6	16.7	
9.4		20.9	35.8	
10		33.1	58.8	
10	41	32.5	49.0	
10		35.6	47.9	
9.6		55.3	59.2	
9.5	42	4.4	33.7	

252: neb GC 351

501—560					561—620					621—680					681—740					741—800				
	2h—3h		−7°			3h		−7°			3h		−7°			3h		−7°			3h—4h		−7°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.3	42	5.4	46.4	K	8.7	4	49.4	20.9	K	9.8	25	31.8	35.8		8.0	40	44.5	28.5	K	9.5	58	38.0	5.9	
8.9		16.8	45.0	K	9.2		58.3	3.4	K	8.7		47.6	49.9	Sj	8.4	41	8.9	2.5		9.4	59	5.5	56.1	
9.7		44.8	56.5		8.9	5	31.6	25.0	Sj	9.3	26	12.1	45.8		9.5		25.4	37.5		10		5.9	41.0	
9.5	43	1.1	43.0		9.5	6	24.4	9.7		7.7		33.5	54.1	K	8.0		33.9	15.8	K	9.2		37.4	40.0	Sj
7.5		10.9	24.5	K	9.4		28.3	1.0		8.2		36.3	55.3	K	7.0		42.8	27.5	Sj	10	0	21.8	38.0	
8.5		11.2	22.0	K	9.4		29.8	1.6		9.7	27	9.7	13.8		9.7		59.6	59.7		8.6		23.2	20.8	L
9.6		48.2	20.8		9.8		33.6	53.9		7.8		9.9	0.1	Sj	8.7	42	47.3	58.0		9.1		31.2	27.5	
9.1		49.0	2.8	K	10		43.7	27.0		9.4		12.4	38.3		9.5	43	25.7	21.4		10		46.5	1.3	
9.0	44	8.6	49.8	K	7.2		46.1	11.8	Sj	8.5		34.7	51.8	K	9.5		37.5	30.8		9.7	1	8.3	56.5	
8.7		28.6	13.8	B	9.4		47.6	49.1		9.4		40.7	39.5		9.8		56.5	32.3		9.7		17.9	50.5	
9.9	45	0.8	14.4		8.2	7	20.0	43.1	B	8.7	28	32.4	8.8	Sj	9.7	44	6.2	12.0		9.9		21.8	3.9	
9.1		45.6	56.5		10		24.3	35.0		9.4		42.7	49.7		9.6		8.6	3.2		9.0		27.5	51.8	WC
9.3	46	9.0	15.6		9.9		25.1	50.6		9.1	29	1.0	38.6		9.1		44.0	6.5	K	9.5		52.2	57.5	
9.8		59.5	2.5		7.3		33.3	14.9	K	9.3		8.7	26.5		10	45	30.9	38.5		9.0	2	18.4	43.7	Sj
9.1	47	11.6	39.8		9.1		45.8	33.9	K	9.8		18.2	7.2		6.6	46	2.5	3.7	Sj	10		23.5	50.3	
10		50.7	33.1		9.3	8	31.5	14.1		9.3		28.2	13.3		9.7		7.3	54.9		9.5		43.8	20.7	
9.5		53.8	35.6		9.1	9	30.2	52.0	R	9.1		34.5	5.8		9.3		7.7	23.6		9.1	3	12.2	14.4	
8.8	48	16.3	25.0	K	9.3	10	53.3	28.9		9.1		40.9	36.5		9.0	47	18.4	15.0		6.1		18.5	18.2	Sj
8.8		32.3	13.0	K	9.6	11	29.8	48.7		9.8		56.1	22.9		9.2		31.0	16.6		9.4		30.0	21.6	
9.5	49	18.7	56.6		9.2		49.1	32.8		9.5	30	28.7	28.1		9.5		47.8	15.8		9.6		47.7	57.9	
9.2		25.0	48.6		9.5	12	3.2	26.2		9.2		34.9	28.3		9.6		55.3	32.8		9.0		48.6	34.7	K
9.3		35.3	14.2		9.1		25.4	46.0		9.0		49.7	27.4	Sj	9.9	48	0.9	32.9		9.5	4	21.4	7.2	
9.6	50	5.9	55.4		9.0	13	11.6	57.5		9.3		55.7	27.6		9.2		8.2	1.0		9.0		29.1	20.9	
10		47.3	20.0		9.6		26.7	47.1		7.7	31	6.1	57.6	K	9.7		9.0	49.3		4.4		46.8	12.7	K
10		55.6	59.5		9.2	14	16.1	16.5		9.6		10.4	17.5		9.4		41.1	20.2		9.0		55.8	0.7	K
9.1		56.5	40.4		9.8		50.2	21.3		9.8		17.3	31.3		8.3		50.3	42.5	K	9.8		58.3	4.7	
9.4	51	10.3	18.4		9.4	15	8.5	39.8		6.0		25.5	51.6	K	8.7	49	7.7	22.0		9.8	5	16.1	16.0	
9.4		15.5	39.8		9.1		27.0	39.0		9.3		30.1	14.3		8.7		42.0	13.4	K	8.9		36.5	12.4	Sj
9.5		28.7	8.0		9.2		49.4	35.7	K	9.4		39.4	2.3		8.2	50	5.1	35.0	K	9.8	6	0.7	0.4	
9.2		49.5	20.3		8.5	16	39.5	46.0	K	9.5	32	5.8	5.2		8.5		33.9	25.1	K	9.4		21.2	0.2	
9.2		50.8	23.9		9.0		40.2	43.1	Sj	9.5		7.1	18.6		9.2		37.3	40.1		9.5		52.5	56.8	
8.7	52	22.7	11.7		9.4	17	0.7	55.9		9.5		19.8	58.1		8.7		51.2	32.5	K	9.8	7	10.2	33.8	
6.7		28.2	45.5	B	8.7		2.1	13.2		9.1		24.1	31.4		8.5	51	6.4	21.6	K	8.5		20.6	20.3	Sj
8.3	53	29.2	8.9		9.1		17.3	52.4	Sj	7.0		41.1	15.1	K	9.5		51.2	6.0		9.2		35.4	42.9	
10		54.1	19.0		9.8		33.6	13.7		9.0	33	54.7	10.2		9.5	52	8.4	45.0		9.1		42.2	35.3	
9.5	54	18.7	7.7		8.0	18	3.8	14.7	L	9.3	34	23.7	1.1		9.9		27.2	14.8		8.9		46.2	33.0	K
6.3		59.2	3.4	K	9.1		24.1	12.3		9.6		41.8	27.3		9.4		55.2	58.1		9.5		48.3	0.5	
9.2	55	10.9	46.3		8.6		50.6	38.1	K	8.5	35	2.6	42.5	K	9.8	53	4.3	19.4		9.3		54.2	31.7	
9.7		22.1	59.7		9.8	19	3.0	6.0		9.8		12.3	29.5		9.5		18.1	54.0		9.0	8	15.5	35.7	Sj
9.1		27.6	34.9	B	9.6		57.4	58.5		9.8		15.4	40.1		9.6		39.2	46.1		4.7		32.6	53.8	K
9.3	56	17.0	51.6		8.9	20	21.9	28.4	Sj	9.5		18.9	19.3		10		54.6	50.8		9.1		38.6	54.2	K
8.7		19.8	42.5	B	9.1		36.5	35.3	K	9.4		24.9	17.3		9.3	54	55.2	8.5		9.8	9	1.5	32.7	
8.9	57	15.0	25.8	K	8.2	21	11.0	1.6	K	9.1	36	4.5	57.7	R	9.4	55	13.3	43.8		9.8		1.6	40.3	
10		57.3	22.9		9.2		14.1	18.2		9.5		43.2	24.5		8.6		18.4	24.8	S	9.3		15.5	13.1	
9.9	58	5.7	1.3		9.8	22	22.4	38.4		9.5		52.7	19.8		10		26.6	2.4		8.1		28.9	5.2	Sj
8.0	59	30.6	12.3	K	6.2		32.9	18.3	K	9.5	37	6.8	23.5		9.5		33.8	9.7		9.5		35.9	40.0	
9.0		53.9	48.1	Sj	8.6		51.2	29.4	Sj	10		10.6	23.4		9.8		34.3	8.4		9.4		36.3	39.0	
9.3	0	3.7	52.6		9.3		59.6	55.0		9.4		21.3	22.6		8.2	56	15.6	19.1	L	9.2	10	10.9	45.5	K
9.9		21.4	8.6		9.8	23	1.3	8.9		9.5		39.8	50.1		9.2		41.9	22.5		9.5		32.4	38.8	
10		25.5	20.8		8.9		1.6	12.4	K	9.6		45.9	18.5		9.1		55.9	45.9	K	9.8		41.2	56.1	
9.4	1	56.3	37.1		9.5		21.5	46.8		9.6		47.6	21.0		8.4	57	16.1	55.8	K	9.2	11	4.7	9.1	
9.2	2	16.1	54.3		10		30.3	54.6		9.3	38	10.7	41.5		9.2		17.2	4.8		8.2	12	1.4	46.8	K
9.8		44.4	27.2		9.4		31.9	17.9		10		17.0	33.7		9.7		25.7	24.1		10		16.9	4.0	
9.1		50.4	43.0	Sj	9.3		37.6	12.8	K	9.1		18.2	41.7		8.5		32.3	9.1	L	9.5		38.4	5.1	
9.8	3	0.6	55.7		9.5	24	22.0	41.8		9.8		52.5	55.7		9.5	58	1.9	19.9		9.2	13	4.9	22.4	
8.8		31.3	36.6		9.4		33.7	15.9		9.1	39	18.4	25.1		9.7		2.5	59.8		10		15.1	25.0	
8.0		33.5	4.4	K	8.8		56.3	18.8		9.5		24.0	9.9		8.5		7.6	50.2	K	9.3		22.5	45.0	
8.5		39.3	7.2	K	7.3	25	11.0	34.7	Sj	9.5		25.8	11.7		8.0		27.9	59.9	K	6.3		41.4	56.2	K
9.4		44.9	15.1		9.2		12.3	34.7	K	9.6		41.8	48.4		9.0		30.0	24.8	K	9.1		48.2	54.4	K
9.1	4	38.5	51.6	R	9.9		21.7	28.2		9.5	40	1.0	53.5		9.4		36.7	21.5	K	9.0		48.5	22.9	

801—860

m	4h m s	−7° ′	
9.1	14 31.7	28.0	
9.7	15 12.4	7.5	
8.9	30.2	53.1	
9.2	49.3	32.0	
9.8	16 6.2	54.4	
9.4	31.3	34.1	
9.1	17 9.1	18.8	K
10	42.8	32.5	
9.3	18 11.7	24.3	
10	41.1	22.2	
9.5	19 1.0	11.3	
9.5	27.5	41.4	
7.5	42.7	12.1	Sj
8.8	50.6	55.3	K
9.9	20 8.5	8.0	
9.6	28.1	41.9	
9.5	21 11.0	38.0	
8.5	20.1	14.8	K
9.8	29.6	45.4	
8.2	30.2	52.7	K
9.6	32.5	58.6	
9.5	41.4	11.3	
9.0	51.2	24.8	Sj
9.9	54.5	4.6	
9.0	22 32.4	32.1	Sj
9.0	23 2.0	9.6	
9.3	37.2	25.0	
9.0	41.4	0.7	
8.3	43.3	33.5	K
9.6	24 2.1	45.4	
9.4	32.2	57.6	
9.0	32.5	20.5	Sj
9.5	25 33.4	23.6	
9.1	50.3	4.7	
9.8	52.4	49.5	
9.2	26 10.0	42.4	
7.2	28.6	17.9	K
5.8	50.9	2.4	K
9.8	27 0.4	13.0	
9.3	5.5	41.4	
6.5	11.2	8.5	K
9.8	21.2	27.8	
10	25.3	57.7	
9.5	51.1	11.8	
8.3	54.1	17.5	Sj
9.8	57.6	24.4	
9.0	28 4.8	35.9	K
10	48.4	13.9	
9.4	29 1.0	22.1	
9.6	25.7	54.5	
9.5	30.1	55.0	
9.6	35.8	55.1	
9.8	41.3	31.6	
9.1	30 7.2	56.1	K
9.7	25.2	6.5	
10	47.7	4.1	
9.5	52.0	54.0	
9.8	31 7.5	19.5	
9.5	9.2	43.6	
10	26.9	4.1	

861—920

m	4h m s	−7° ′	
8.7	31 38.8	48.6	K
9.3	46.0	11.0	
9.0	52.6	14.6	
8.7	53.7	41.1	K
10	32 17.5	42.8	
9.7	17.9	25.4	
9.1	29.6	11.6	
9.6	43.0	6.2	
8.5	54.7	29.8	K
9.5	33 0.8	34.7	
9.6	2.0	54.4	
10	6.1	22.5	
9.4	9.1	15.4	K
9.4	47.7	12.6	
9.0	54.7	53.6	K
7.5	34 0.9	1.5	Sj
9.5	35 8.5	54.4	
9.8	32.8	27.8	
9.8	33.7	11.1	
9.3	50.4	36.4	
9.5	54.8	55.8	
8.5	36 6.0	41.0	K
9.0	9.1	25.2	
9.0	12.1	0.8	Sj
10	22.2	28.8	
8.9	49.5	18.9	
9.8	37 6.0	40.7	
9.0	36.3	41.0	
9.3	42.5	43.0	
9.7	38 15.9	27.1	
9.5	21.6	43.9	
9.1	48.7	51.1	
8.0	57.5	15.6	Sj
9.6	39 23.0	51.5	
9.5	25.7	2.2	
9.4	54.1	46.0	
9.8	41 0.5	4.6	
9.8	3.2	59.5	
8.3	6.9	15.8	Sj
9.7	8.0	14.1	
9.5	13.2	12.8	
8.9	17.4	29.8	
8.5	34.2	54.6	
10	53.1	27.7	
8.0	54.7	22.0	L
9.0	42 15.5	32.0	
9.0	17.6	37.8	
9.8	47.2	45.4	
9.6	43 3.6	42.5	
9.9	4.4	31.7	
9.1	34.8	11.1	Sj
9.5	44 2.0	21.1	
9.5	18.9	45.2	
9.5	32.3	55.1	
8.8	55.0	4.5	K
10	45 14.9	33.9	
7.5	21.4	57.2	K
9.8	38.3	4.1	
8.3	45.2	54.1	K
9.5	46 6.9	56.1	

921—980

m	4h—5h m s	−7° ′	
9.5	47 3.7	20.4	
9.5	12.8	51.4	
9.3	13.9	56.5	
9.3	26.1	40.1	
9.5	50.7	55.2	
9.5	56.1	6.7	
9.8	58.6	41.7	
10	48 6.8	12.2	
9.0	14.2	42.1	
9.8	38.4	56.1	
9.5	42.9	27.2	
9.5	52.0	31.3	
9.1	53.9	28.9	
9.3	54.1	9.1	
9.2	49 5.7	44.5	
8.0	22.6	15.3	Sj
9.8	50 0.4	32.8	
9.0	9.6	5.5	
9.8	51 16.3	45.0	
9.8	26.6	55.5	
9.1	52 7.2	17.2	
9.5	47.3	41.9	
9.5	54.7	3.5	
9.5	53 19.4	18.0	
9.7	34.3	10.5	
9.5	37.7	54.1	
9.0	43.8	44.9	Sj
4.9	54 25.2	33.3	K
9.0	38.3	22.9	
9.4	39.2	18.3	
8.6	47.4	35.7	K
9.5	47.6	55.2	
9.3	50.5	25.4	
9.4	53.5	19.1	
9.1	57.5	20.5	
9.5	55 37.9	3.0	
9.2	42.5	15.0	
9.6	55.2	21.7	
9.5	56 10.0	5.8	
9.8	13.1	10.9	
8.5	14.4	30.3	K
9.6	41.1	11.2	
9.5	57 33.2	31.8	
9.2	37.9	20.0	
9.5	48.6	12.0	
9.5	55.2	41.7	
9.8	58 13.1	40.5	
9.8	21.7	14.9	
9.5	30.3	16.4	
8.4	44.8	0.3	K
9.4	51.0	35.8	
9.0	59 2.3	3.2	
9.5	6.0	34.9	
8.5	23.3	55.9	K
9.5	28.4	5.0	
9.3	44.4	5.0	
9.5	52.8	1.4	
9.5	55.0	35.3	
10	0 13.4	6.3	
10	34.8	2.3	

981—1040

m	5h m s	−7° ′	
9.5	0 34.9	30.9	
9.5	44.2	43.4	
9.5	45.9	30.9	
9.5	52.9	27.8	
7.5	1 55.7	21.9	
9.0	2 3.3	55.9	
9.2	28.9	49.1	
10	34.5	49.4	
8.7	3 0.7	15.2	K
9.5	13.8	40.1	
9.0	18.1	11.1	
9.4	21.4	21.2	
8.2	21.9	46.5	K
10	43.4	20.0	
9.5	47.9	20.1	
9.5	4 5.0	28.1	
8.5	37.1	59.8	K
9.5	57.6	36.0	
9.5	58.6	31.0	
9.5	5 21.5	4.3	
9.5	36.5	7.9	
9.7	42.9	27.1	
9.5	6 4.4	3.4	
9.5	22.7	14.6	
9.0	30.0	30.7	
9.0	32.6	11.0	K
9.3	42.7	16.8	
10	7 20.2	39.6	
8.0	27.0	27.4	K
8.5	28.0	51.7	K
9.5	37.2	37.4	
7.0	39.7	15.1	K
8.5	54.5	52.0	
9.2	59.7	15.4	
9.5	8 3.4	45.7	
8.7	34.5	6.5	K
9.4	39.6	12.0	
8.5	9 5.6	35.9	K
9.4	21.0	6.0	
9.0	27.0	29.2	
8.0	33.3	22.1	K
9.0	40.4	47.5	
9.4	52.1	56.0	
8.0	54.5	6.5	K
9.4	10 0.7	37.5	
9.5	10.3	58.8	
9.5	22.0	30.6	
4.0	34.4	0.2	K
9.5	38.1	33.7	
8.5	45.3	44.4	
9.5	53.8	18.1	
9.5	11 21.3	44.3	
8.0	39.5	53.7	K
9.5	43.7	4.1	
9.6	12 17.8	3.4	
8.0	20.0	30.4	K
9.5	24.0	54.2	
9.5	24.8	56.7	
9.5	40.2	40.8	
9.1	43.4	49.7	K

1041—1100

m	5h m s	−7° ′	
8.4	12 48.5	4.6	Sj
8.5	49.2	16.2	L
8.5	13 10.7	15.3	
9.0	11.4	22.4	
9.5	21.3	35.8	
9.1	22.0	50.0	
9.0	27.6	11.3	
9.5	55.9	27.0	
8.0	14 14.2	37.6	K
9.4	19.4	1.9	
8.7	45.4	48.4	K
8.5	15 8.1	36.1	L
9.5	12.0	50.2	
8.0	35.3	44.6	K
10	16 1.0	49.7	
9.5	10.2	59.7	
9.5	12.6	9.8	
9.2	16.8	22.3	
9.5	23.0	12.5	
9.5	34.5	52.7	
8.5	36.4	2.3	Sj
9.7	48.6	31.1	
9.6	52.9	36.4	
4.3	58.3	56.8	L
9.2	17 31.4	1.4	
10	35.0	59.4	
9.5	38.0	28.6	
9.0	43.5	50.5	
9.4	18 9.3	44.6	
9.2	17.0	28.5	
8.0	19.4	49.9	K
10	46.0	30.3	
10	48.1	36.1	
9.5	49.4	46.8	
8.5	57.5	5.7	K
9.0	19 22.9	24.9	
9.5	24.0	52.6	
9.2	26.8	8.5	
9.1	59.3	56.3	
9.5	20 5.0	24.5	
9.0	27.6	3.5	
9.5	30.8	14.7	
9.0	35.0	0.8	K
8.7	48.1	29.4	
9.5	49.0	47.0	
9.0	58.5	47.5	
9.5	21 20.5	46.3	
8.6	38.1	51.2	K
8.5	22 5.6	54.3	K
9.5	8.6	3.4	
9.0	20.4	41.8	
6.8	25.0	23.5	K
9.0	41.4	41.4	
9.6	43.9	21.6	
9.5	49.0	13.0	
9.0	49.5	45.8	
9.5	23 0.9	21.2	
9.5	11.2	13.0	
8.0	20.2	33.8	K
9.5	24.0	6.5	

1101—1160				1161—1220				1221—1280				1281—1340				1341—1400			
	5h	−7°			5h	−7°			5h	−7°			5h—6h	−7°			6h	−7°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.3	23 50.0	26.2		9.0	37 25.1	24.4		8.3	48 38.2	29.4	K	9.7	59 8.5	35.1		8.2	7 57.0	39.7	Sj
9.8	24 29.8	58.0		8.0	33.6	49.0	Sj	8.3	47.5	40.6	K	9.4	14.2	29.8		8.8	8 12.9	56.7	K
7.5	39.7	10.0	K	10	38 22.4	37.7		9.3	48.1	45.9		9.5	40.8	37.8		9.3	18.2	56.0	
9.5	51.2	35.9		9.5	29.4	54.7		9.4	49 3.2	28.9		9.8	49.0	28.5		9.3	26.5	39.0	
8.8	51.8	49.8		9.5	51.9	15.4		9.5	12.3	31.6		9.2	58.8	52.8		8.8	31.9	13.8	K
5.0	55.0	24.9	K	9.0	39 3.8	8.7		9.5	14.8	34.7		9.8	0 3.5	55.0		9.4	50.7	49.9	
9.0	58.7	56.3		7.8	30.6	0.7	Sj	9.0	35.4	39.7		9.3	19.0	14.8		9.1	57.6	0.0	Sj
9.4	25 1.0	22.0		9.5	43.0	17.2		9.0	39.4	57.5		9.2	20.8	4.5	K	8.9	58.1	42.6	
9.5	12.2	31.9		9.5	56.6	0.7		9.7	51.8	2.8		9.5	33.8	5.0		8.6	9 31.5	16.9	Sj
9.5	26.9	19.8		9.0	40 5.8	54.3		9.5	50 13.9	57.4		9.1	40.8	51.4		9.5	33.3	13.5	
9.5	32.5	47.9		10	34.9	30.9		9.3	14.0	18.7		8.5	42.9	9.0	K	9.9	42.8	17.2	
9.5	34.9	18.9		8.5	41.2	26.6	K	8.0	45.5	41.0	K	9.0	49.9	20.2		8.5	10 4.7	46.9	Sj
9.5	39.7	9.1		9.0	41 24.9	14.4		9.8	50.4	57.9		9.5	58.9	55.4		8.6	21.3	24.5	
9.0	46.5	44.8		9.5	27.5	20.6		8.5	51.1	23.6	L	9.5	1 10.0	56.6		9.2	23.7	0.7	
8.5	26 16.4	41.7	K	9.5	48.5	43.4		9.6	54.0	16.6		9.3	10.1	20.9		9.3	27.3	52.4	
9.5	45.2	35.9		10	55.2	26.5		9.5	51 20.5	47.1		9.5	14.0	35.3		9.5	36.4	8.1	
9.4	47.1	30.1		9.2	42 3.9	58.7		9.2	25.4	7.0		9.3	33.0	15.6		9.5	38.5	35.5	
9.6	48.8	2.0		9.4	4.9	59.5		9.8	35.2	33.3		9.2	42.1	18.3		8.7	40.7	50.8	K
6.8	27 0.0	7.8	L	9.5	12.0	5.9		9.5	51.0	34.2		6.8	47.4	55.7	L	9.0	53.0	30.9	
9.5	4.0	56.0		9.4	14.5	58.9		9.5	58.2	39.4		9.5	2 0.5	44.6		9.8	53.2	57.4	
9.5	15.1	28.3		9.5	28.0	49.1		8.5	52 10.5	40.5	Sj	9.7	40.9	55.8		9.1	57.4	11.2	
9.0	24.1	29.6		8.5	28.5	2.3	Sj	9.5	16.3	54.9		9.3	51.9	10.7		9.5	11 16.8	25.6	
9.5	38.3	39.0		9.5	59.5	44.3		9.0	30.0	17.2		9.5	55.2	23.6		8.5	19.9	8.1	Sj
6.8	44.9	17.9	K	9.3	43 37.2	26.4		10	59.5	36.9		9.5	3 2.3	37.4		9.5	33.5	34.0	
9.4	54.7	47.7		9.5	48.6	1.0		9.2	53 3.8	5.2		8.5	9.3	4.9	K	8.8	34.2	46.9	K
9.7	28 2.7	40.8		9.2	44 20.0	19.8		7.5	27.0	35.5	K	9.0	9.6	42.4		9.0	42.3	53.2	K
10	8.7	16.5		6.0	22.3	34.0	L	9.5	28.0	34.6		9.5	30.6	41.9		9.5	53.0	37.1	
9.8	17.1	14.9		9.3	29.3	32.2		7.0	31.3	29.3	K	8.5	36.9	8.0		9.5	55.6	3.9	
10	34.6	0.6		9.5	42.0	31.7		8.5	36.0	49.4		9.8	51.5	35.2		9.5	57.6	3.5	
9.0	39.6	30.0		8.3	44.4	58.1	M	9.5	44.8	49.4		9.5	55.9	21.1		9.0	12 41.3	25.5	
7.0	29 6.1	30.0	K	9.3	49.3	31.3		9.1	45.5	12.1		9.5	57.8	57.7		8.9	42.0	38.6	
8.5	44.7	11.2	K	8.0	56.0	20.5	Sj	9.3	54 2.4	32.9		9.5	58.8	48.8		9.5	42.7	53.1	
9.3	45.1	58.7		9.3	45 14.6	46.4		9.0	21.9	7.4	Sj	7.0	4 1.2	15.6	L	5.5	44.1	45.5	B
9.0	45.6	27.3		8.7	20.1	25.0	L	9.0	24.7	45.7		10	4.5	25.9		9.8	48.8	57.0	
9.5	57.7	9.4		9.4	51.2	39.1		9.5	54.4	57.7		7.8	10.7	40.4	K	8.3	54.5	11.3	Sj
9.5	30 5.2	33.6		9.5	57.2	30.4		8.7	55 0.9	55.0	K	9.8	20.0	12.8		9.0	58.1	42.5	
9.3	17.8	16.6		9.5	57.7	27.7		7.0	10.1	17.6	K	9.4	20.8	20.2		9.5	13 2.2	11.8	
9.3	56.1	29.5		9.5	46 1.2	25.0		9.7	45.5	59.2		8.0	23.1	13.2	K	7.5	8.2	48.3	K
9.0	31 7.6	50.4		9.6	1.5	53.9		9.3	52.3	53.4		9.4	24.4	20.9		9.5	17.3	4.7	
9.5	28.5	49.5		9.7	10.4	52.7		9.4	56 8.7	1.1		9.5	5 4.9	24.5		10	23.4	43.4	
8.5	33.1	29.0	K	10	11.1	42.9		9.0	10.7	47.9		8.2	17.8	17.8	K	9.9	25.9	44.2	
5.0	51.9	18.3	K	9.7	12.5	55.0		9.0	12.7	1.9		8.7	25.6	26.6		9.9	41.2	49.6	
9.5	32 21.4	41.5		9.5	16.4	11.6		9.5	13.4	32.3		9.8	38.4	59.7		10	50.2	11.4	
9.3	22.1	28.6		9.3	19.5	19.8		9.0	16.3	49.3		9.5	39.6	5.7		10	52.0	14.5	
9.5	32.1	38.4		9.5	35.0	26.8		9.5	20.2	9.3		8.2	50.7	16.0	K	9.5	54.1	45.4	
9.5	58.4	42.8		9.8	46.1	43.4		9.5	33.2	24.7		9.5	52.1	57.3		10	14 3.2	1.5	
9.5	33 5.9	19.5		9.8	47.2	57.0		9.5	42.5	38.1		8.5	6 8.8	25.0	K	9.4	6.3	52.3	
7.0	32.4	44.6	K	9.0	50.3	3.5		9.2	57 0.4	33.6		9.0	25.6	40.3	K	10	31.0	35.9	
9.5	34 16.1	27.2		9.5	47 11.1	25.0		9.5	15.5	26.9		9.1	28.8	28.8		9.5	32.5	17.2	
9.0	16.7	32.6		9.0	45.2	25.0		9.0	31.7	48.4		9.1	32.6	42.6	K	9.5	42.3	31.8	
8.0	21.5	1.3	Sj	9.0	49.3	33.0		9.2	39.5	36.3		9.3	34.7	46.8		9.8	55.1	15.4	
9.3	57.4	41.4		9.2	55.2	27.6		9.5	46.5	35.3		6.5	56.6	12.8	L	9.3	56.8	28.7	
8.0	35 41.0	24.7		9.2	57.6	2.1		9.0	49.5	42.5		9.3	7 3.4	33.2		9.5	59.2	55.4	
9.4	44.8	32.7		9.5	48 3.8	9.7		8.5	58 2.4	56.8	K	9.5	5.2	18.3		9.2	15 13.1	15.6	
7.5	58.4	32.9		9.5	5.8	11.1		8.5	3.4	31.3	K	9.2	20.9	55.8		9.5	17.9	33.1	
8.2	36 27.8	58.1	K	9.8	8.5	55.2		9.5	18.0	12.6		9.3	21.0	41.2		9.3	31.6	16.5	
9.3	29.8	10.6		9.8	10.3	48.1		9.5	47.2	24.2		9.3	31.5	54.1		9.8	35.4	53.5	
9.0	33.1	21.7	K	9.7	20.7	43.9		8.0	59 4.1	18.4	L	8.7	40.3	23.8	L	9.0	35.4	9.4	Sj
9.4	37.4	38.7		9.4	25.8	47.5		7.2	6.5	37.1		9.5	47.5	54.5		8.5	36.0	33.9	K
9.0	37 18.8	33.4		7.8	35.5	41.5	K	8.5	8.3	5.0		9.4	54.6	42.1		9.4	52.2	5.9	

1401—1460				1461—1520				1521—1580				1581—1640				1641—1700			
6h		−7°		6h		−7°		6h		−7°		6h		−7°		6h		−7°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.8	16 2.8	52.4		9.7	25 39.0	40.2		9.5	33 55.7	25.5		10	42 57.0	57.2		9.7	49 48.7	2.4	
9.5	16.7	23.6		8.4	43.2	24.2	K	9.5	34 0.0	59.1		9.6	59.4	49.4		6.4	50 1.2	59.8	B
8.7	32.8	47.5	K	8.8	54.8	41.2		7.1	2.0	26.5	K	9.3	43 4.5	23.4		9.0	3.2	38.2	
9.5	41.5	37.7		9.5	26 8.3	16.5		8.2	11.2	51.8	L	8.8	8.8	38.0	L	8.7	21.6	5.7	K
9.1	49.2	46.0		9.8	10.9	9.8		9.1	17.8	46.7		9.3	16.2	15.3		9.8	23.5	18.5	
9.8	58.7	35.0		9.4	14.3	18.2		7.2	21.6	2.3	K	9.8	19.4	52.3		9.5	28.0	37.6	
10	17 26.2	3.7		9.4	22.8	46.7		9.8	27.9	42.2		9.3	25.0	2.9	K	9.0	29.3	15.0	
9.5	26.3	28.0		9.5	32.1	31.0		9.4	33.4	24.3		9.6	28.6	13.8		9.7	32.5	55.3	
9.1	32.6	38.0		9.1	38.6	37.0	K	9.5	33.9	26.4		9.7	31.0	15.6		8.8	36.4	36.6	
9.5	36.7	45.2		9.3	40.2	58.6		8.5	40.1	50.2	L	9.7	31.2	1.2		9.7	38.7	11.4	
9.3	41.6	54.2		8.0	40.5	5.8	K	9.4	42.4	57.2		9.1	33.4	8.8	K	9.9	40.8	25.4	
9.1	50.0	33.8		9.5	48.2	12.2		9.8	35 9.2	33.6		6.8	43.4	52.7	K	9.4	42.2	16.0	
8.7	51.0	31.6		9.3	52.6	16.4		9.8	21.0	26.9		9.5	51.1	33.4		9.2	53.7	1.0	
9.4	51.2	1.6		8.5	27 28.4	50.8	K	9.2	49.7	32.9	K	9.0	57.6	46.2		9.8	51 0.8	50.5	
9.3	18 2.3	19.9		9.8	31.4	9.7		9.0	36 8.2	54.5	Sj	9.4	44 1.3	1.9		9.1	7.4	39.3	
9.7	10.4	25.3		9.8	57.3	5.7		10	44.9	58.4		9.8	8.3	58.9		9.2	17.1	45.0	
10	19.4	0.4		9.0	28 11.2	58.4		9.4	51.3	12.8		10	8.4	7.6		8.7	17.1	18.6	K
9.0	20.3	28.2		9.2	19.5	27.1		9.5	57.4	11.0		9.7	25.1	20.1		9.8	23.8	53.1	
9.2	54.4	47.8		8.5	25.9	15.8	L	9.2	59.6	16.2		9.1	27.0	2.2		9.5	33.7	57.4	
9.5	58.7	42.6		9.5	40.2	37.6		8.8	37 0.1	28.7		9.8	35.9	47.7		9.4	35.7	19.5	
9.2	59.5	14.6		10	49.1	7.6		9.3	5.3	58.9		9.7	40.0	7.2		9.0	37.0	48.1	
6.8	59.8	48.7	K	9.2	49.8	13.1		9.5	15.0	46.8		9.1	44.7	6.7	K	9.6	37.5	21.6	
9.0	19 3.7	2.5		9.1	58.3	42.2		9.5	35.1	36.9		9.1	54.0	6.7	K	9.4	48.7	32.3	
7.8	13.4	16.8	K	9.4	29 2.4	50.3		9.9	38.9	58.6		9.3	56.4	6.7	K	8.9	52 4.4	0.8	
9.8	29.7	19.8		9.7	10.4	26.1		9.7	41.7	20.0		9.4	45 13.0	13.2		9.1	6.8	59.0	
9.7	34.8	32.2		10	15.7	20.2		9.5	57.2	25.7		9.6	16.1	1.1		9.6	18.0	46.9	
9.6	41.6	52.8		9.2	31.7	6.3		9.7	38 8.1	50.7		9.8	22.0	54.2		8.7	18.1	4.5	M
9.0	43.4	25.4		8.6	36.0	10.6	K	9.3	8.8	45.3		9.7	23.3	6.2		8.2	20.0	15.6	K
6.7	44.4	25.5	K	9.4	39.3	48.6		9.5	44.0	45.8		9.7	34.4	33.5		9.4	21.2	47.3	
9.5	20 2.0	34.9		9.5	46.4	0.2		9.4	52.7	34.0		9.5	48.1	9.4		9.8	23.6	20.8	
9.7	13.1	10.3		9.4	30 9.0	29.6		7.3	56.9	11.4	Sj	9.5	54.8	15.6		9.3	23.8	36.3	
9.5	20.6	43.5		9.6	10.1	13.8		9.7	39 14.7	17.6		9.7	55.9	33.9		9.0	26.2	25.1	
8.4	42.2	53.7	K	9.3	30.9	53.2		9.8	14.9	12.4		9.4	46 1.1	4.0		9.1	26.8	7.7	
8.5	21 7.9	25.0	L	9.2	32.2	56.9		9.5	21.7	34.0		7.8	8.5	35.5	K	9.1	36.3	56.6	
9.5	22.8	55.0		8.8	31 0.8	8.2	K	10	31.2	0.0		9.4	10.7	32.2		9.2	36.3	43.3	
9.0	31.1	11.4		9.8	1.9	2.0		9.8	38.0	33.9		9.3	23.0	31.6		10	41.9	4.0	
9.5	31.5	33.0		8.6	12.9	12.3		9.0	38.5	46.5	K	9.7	37.1	53.6		10	42.1	0.0	
8.2	22 33.3	16.0		9.3	16.2	40.6		9.6	42.1	6.9		9.8	41.6	13.7		10	49.2	19.9	
9.3	45.8	24.5		9.3	19.5	26.2		9.4	42.5	16.5		9.1	42.3	45.3		9.8	50.1	7.7	
8.5	23 10.6	38.4		9.5	43.2	43.6		9.9	51.0	12.6		8.8	56.7	55.0		9.6	53 2.0	19.9	
9.8	11.8	10.8		9.5	46.6	1.2		9.1	51.7	10.2		9.6	47 7.0	31.0		9.5	5.0	21.2	
9.5	16.8	5.8		9.5	52.9	12.9		9.4	40 14.8	19.6		9.2	11.5	21.1		9.8	6.9	3.5	
9.5	47.6	18.7		9.8	32 7.9	54.2		10	22.7	2.1		9.8	13.0	25.1		9.5	8.1	35.8	B
9.0	55.9	24.5		9.8	15.4	28.0		9.1	31.0	56.2		8.3	20.3	13.3		9.3	12.0	56.4	B
9.5	59.8	14.5		9.8	16.0	30.3		9.7	50.7	49.0		9.2	31.4	1.8		9.2	19.5	24.0	
9.1	24 2.1	37.9		9.3	20.4	52.4		9.8	52.2	12.9		9.2	37.9	48.1		9.8	47.3	55.8	
9.5	28.0	32.7		9.2	37.1	1.9		7.0	41 21.8	35.7	L	9.1	52.6	43.0		8.5	54 17.4	31.2	
9.6	28.9	55.3		9.3	38.8	48.8		8.5	27.0	57.3		8.6	58.5	39.4		9.5	25.3	20.8	
9.0	31.6	55.1		9.0	39.4	54.5	K	8.6	31.4	0.4		9.3	48 11.8	14.9		9.1	26.4	32.3	
9.4	55.9	10.4		9.3	42.0	33.0		9.0	31.8	38.5		9.8	21.0	34.2		9.3	29.7	36.1	
9.6	56.7	53.5		9.5	49.5	33.9		8.8	34.3	16.0	Sj	9.8	45.5	59.5		9.4	30.4	21.1	
9.5	25 0.5	30.2		9.6	51.3	57.7		8.8	42.6	7.5		9.8	58.4	25.3		9.4	50.4	28.7	
9.0	5.9	56.4		9.8	58.7	5.6		9.3	49.5	25.0		9.2	49 8.8	49.5		9.8	54.0	57.0	
9.5	9.3	49.9		9.6	33 7.2	16.0		9.5	49.9	2.0		9.7	27.0	57.6		9.0	59.2	29.4	
8.3	10.5	12.0	K	9.5	21.9	9.6		9.0	42 15.4	52.3		9.7	28.5	3.1		8.5	55 23.1	39.5	
7.5	14.4	18.3	K	8.3	27.8	17.2	K	8.7	20.4	33.7		9.0	32.7	59.7		9.5	26.4	52.5	
9.8	14.7	0.7		9.4	28.0	14.4		9.5	27.0	19.2		9.8	34.1	5.1		9.5	30.4	53.2	
9.4	24.3	29.7		9.3	41.5	44.9		7.2	35.1	15.1	K	9.7	37.8	17.2		9.3	37.6	47.1	
9.7	36.1	43.6		8.7	50.2	4.1	K	9.5	42.1	24.4		9.4	41.0	29.8		9.3	40.4	43.1	
10	39.0	23.9		9.4	53.0	41.0		9.7	42.3	47.8		7.6	41.1	59.7	B	9.0	43.8	3.2	

1571: 34:10 15′49″.9 B_1, Ep. 1884.12 1572: 42:76 7′30″.4 B_1, Ep. 1884.10

1701—1760				1761—1820				1821—1880				1881—1940				1941—2000			
	6h—7h	−7°			7h	−7°			7h	−7°			7h	−7°			7h	−7°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.0	55 44.0	34.1		9.1	1 27.7	18.8		8.4	7 16.9	16.2	L	9.8	12 6.0	35.3		8.1	17 54.3	19.8	K
9.5	47.4	27.5		9.9	32.1	1.5		8.7	19.1	7.8	K	9.8	9.9	10.9		9.8	54.6	11.5	
10	52.0	7.9		9.3	36.1	46.9		8.8	24.8	20.0		9.3	21.9	53.6		9.5	59.1	28.2	
8.8	53.7	57.5		9.2	39.6	14.2		9.5	42.0	38.7		9.4	22.2	16.0		9.8	18 7.4	27.3	
9.0	56 5.3	15.7		9.8	48.6	3.2		9.2	44.5	57.2		8.8	22.9	28.1	M	10	15.3	59.8	
8.9	6.5	22.0		10	53.8	36.3		9.4	48.3	57.3		9.5	23.0	37.6		9.8	16.0	36.7	
9.3	13.9	25.7		9.7	55.2	15.1		9.4	51.5	17.2		9.8	24.9	24.4		9.5	23.6	16.9	M
10	21.7	32.3		8.3	2 0.7	42.6	K	8.8	54.1	4.7	K	9.6	47.4	35.6		9.5	25.0	36.7	
9.3	23.4	40.0		9.8	6.1	1.1		7.8	57.8	25.8	L	8.8	56.2	37.7	M	8.7	26.8	27.5	K
9.8	26.9	35.3		8.5	6.7	32.5	K	9.5	8 15.4	42.6		9.8	57.0	16.5		9.8	28.4	55.3	
9.3	33.4	37.2		9.2	7.2	9.6		9.8	21.0	41.7		8.6	59.3	25.8	M	9.3	30.4	58.8	
8.8	38.1	38.2	K	9.3	23.7	34.0		9.5	25.0	32.8		9.8	13 1.1	11.3		9.6	32.1	5.1	
9.5	41.4	27.4		9.3	27.4	28.7	M	9.3	26.5	14.4		10	10.1	43.9		9.9	37.0	40.7	
10	48.7	49.4		9.5	27.6	46.4		9.5	26.7	37.8		10	11.4	48.1		9.0	40.8	6.3	
9.7	57 3.4	33.8		9.5	40.0	26.9		8.9	30.8	13.9		9.8	13.2	14.2		9.1	45.2	40.4	
9.0	10.7	40.4	K	9.5	49.9	50.0		9.8	33.5	10.8		9.9	22.6	52.3		9.6	47.0	19.0	
9.4	19.9	13.7		9.5	52.0	41.8		9.5	39.7	13.0		9.6	35.5	18.1		9.5	48.4	1.7	
9.5	20.1	40.1		9.7	3 2.0	30.7		9.8	40.6	42.5		9.4	37.4	16.6		9.5	53.2	49.2	
8.8	31.1	3.9		9.1	2.6	50.3		9.7	44.5	11.6		9.1	46.6	12.2	M	9.5	59.8	28.5	
10	33.6	36.3		9.7	22.8	29.4		9.3	51.5	12.8		9.0	52.8	16.1		9.6	19 2.2	6.0	
9.8	51.7	4.4		9.6	24.1	11.5		9.5	56.9	32.4		9.7	53.7	17.2		10	14.7	21.5	
9.8	55.5	7.0		9.2	30.1	40.1		9.7	9 1.8	22.8		9.5	54.9	33.3		9.2	15.4	33.6	
9.1	55.6	25.0		7.7	32.4	37.9	K	9.2	11.8	37.1		9.3	56.2	42.1		7.5	22.4	5.3	Sj
9.7	57.1	35.6		9.6	47.1	34.4		8.0	12.2	38.0	K	9.9	57.9	53.4		9.8	29.7	13.8	
9.1	58 3.1	26.5		9.8	53.8	51.0		9.3	22.1	4.3		8.9	59.4	19.8	Sj	9.5	37.6	49.1	
9.0	7.7	29.2		9.8	53.8	47.8		9.8	25.4	46.5		10	14 8.7	1.2		9.2	56.3	16.2	M
10	16.0	38.7		10	54.2	22.5		9.8	41.8	51.9		10	19.0	40.1		9.4	58.1	5.1	
9.0	16.8	4.5	Sj	9.4	56.8	44.7		9.2	43.2	3.5		8.8	21.1	6.6	K	8.4	59.3	21.0	K
9.0	20.8	4.6	K	9.5	4 8.9	27.2		9.9	49.5	4.6		9.4	23.4	19.6		8.7	20 1.5	40.9	K
9.4	21.8	24.0		7.8	10.2	27.7	K	9.4	53.1	0.0		9.8	25.2	36.8		9.2	2.5	28.9	
7.2	23.2	55.0	B	9.3	17.5	57.0		7.6	56.3	16.2	K	9.8	31.2	46.0		8.8	5.0	57.2	
9.4	28.4	49.1		9.1	21.5	56.8	K	10	10 2.6	47.8		9.8	50.3	6.1		9.7	19.9	58.9	
9.5	44.5	56.2		9.6	27.0	13.8		9.7	6.7	41.3		9.9	15 0.2	6.2		9.3	32.7	20.1	
9.8	55.5	10.8		10	34.1	0.6		9.3	9.4	54.1		9.4	1.9	53.0		9.5	41.8	57.7	
9.4	58.7	36.9		9.8	47.9	50.5		8.8	11.1	59.8		9.4	12.7	52.9		9.7	42.0	10.7	
9.5	59 2.7	31.4		10	48.4	4.7		10	11.9	7.7		9.3	17.5	6.3		8.8	44.4	43.3	K
9.6	6.9	2.4		8.9	52.0	23.8		9.7	13.8	1.1		9.3	23.9	46.7		9.3	45.1	13.3	M
9.3	19.6	5.2		10	54.1	58.1		9.6	33.9	5.6		9.7	25.5	28.5		9.5	57.5	55.8	
9.5	43.3	56.0		9.8	5 7.4	6.2		9.8	33.9	43.8		9.5	31.6	50.2		9.3	58.9	25.7	
9.1	47.8	5.3		10	18.5	39.6		10	38.8	55.9		9.6	44.1	33.9		9.8	59.4	46.5	
8.9	49.3	2.1		9.4	25.7	57.9		9.5	45.3	13.2		9.4	44.1	36.3		9.0	21 7.7	15.3	M
8.3	54.8	20.3	K	7.9	28.5	58.3	K	10	48.4	1.4		9.2	52.2	41.3	K	9.2	18.2	58.6	
9.5	55.6	10.7		10	38.4	41.4		9.5	50.4	55.6		9.4	16 1.7	23.9		9.2	30.7	23.6	
9.1	59.3	12.7		9.9	42.3	44.1		9.6	11 0.7	52.1		9.3	7.7	35.5		9.5	32.0	30.5	
8.8	0 0.0	31.3		9.9	42.4	38.2		9.4	13.7	46.7		9.4	14.2	31.5		9.1	33.0	0.1	Sj
9.1	10.6	20.9		10	51.2	57.5		9.7	17.6	30.1		10	21.1	5.6		9.7	34.0	33.7	
9.8	16.5	33.8		9.6	54.0	39.1		9.8	19.6	48.8		9.7	39.7	49.0		10	41.1	34.2	
8.8	29.7	34.9		8.5	56.7	41.0		9.5	22.8	7.2		9.5	46.2	11.1		9.5	44.6	14.0	
9.0	32.2	23.1		9.4	59.7	40.3		9.4	27.6	20.9		9.5	47.5	56.0		8.7	48.8	57.8	L
9.5	33.1	2.2		8.4	59.9	52.1	Sj	8.9	30.7	34.3		9.2	48.3	41.3		10	53.1	7.7	
8.9	35.3	24.8		8.8	6 17.6	21.4		9.8	31.5	42.3		9.5	50.4	12.5		10	55.3	8.0	
9.5	37.2	1.0		9.4	20.1	46.3		8.9	37.0	11.1	Sj	8.8	51.9	41.7	K	9.6	22 0.1	7.4	
9.4	40.7	41.4		9.3	24.3	41.3		7.8	37.1	19.3	L	9.5	53.5	16.9		9.7	3.2	39.8	
9.0	44.3	45.4	K	9.2	38.4	50.4		9.3	42.3	31.8		9.3	17 4.1	24.6		9.3	3.8	24.8	
9.4	44.6	27.9		9.5	42.9	25.3		9.4	44.1	42.3		9.7	10.9	14.8		8.5	6.9	43.7	
8.8	1 3.6	47.6	K	9.4	49.7	44.5		8.9	51.2	15.8	M	9.1	14.9	34.8	M	5.9	23.2	15.6	K
9.4	4.9	43.0		9.3	49.8	24.7		9.5	52.8	17.6		9.4	24.2	34.7		10	35.0	35.0	
9.8	12.0	48.8		9.8	55.7	53.3		9.5	53.4	21.3		10	37.8	7.7		9.8	43.4	20.7	
9.7	14.4	31.3		9.2	56.0	4.5		8.5	53.4	43.7		9.7	47.6	53.1		10	43.5	42.2	
9.6	23.4	44.4		9.7	56.2	37.4		9.2	12 5.4	0.9		8.3	49.6	51.4	M	10	46.8	10.7	

1742: roth

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	7h	−7°			7h	−7°			7h	−7°			7h	−7°			7h	−7°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.7	22 50.8	34.9		9.2	28 57.0	6.2		8.9	33 55.7	59.3	K	10	39 7.8	47.5		9.5	46 33.6	17.1	
8.7	57.8	26.9		9.8	29 0.5	5.8		9.5	34 3.4	49.7		9.8	27.5	46.5		9.3	40.7	8.7	
9.4	23 4.0	38.7		9.8	12.6	54.9		10	4.8	42.1		10	30.8	9.5		9.5	41.5	31.0	
9.3	7.4	26.5		8.7	14.3	42.7		9.5	8.2	35.2		9.3	31.6	50.6		9.0	55.6	25.1	M
9.5	9.6	57.0		6.3	16.1	59.5	K	10	17.5	1.2		8.6	56.7	56.4		9.0	59.2	7.1	K
10	15.7	14.5		9.7	19.3	10.8		8.3	27.1	30.6	Sj	9.8	58.8	11.9		8.5	47 21.6	0.8	Sj
8.3	35.5	44.8		9.1	21.5	15.5	Sj	9.3	36.5	7.8		9.4	40 16.4	32.5		9.4	30.3	29.7	
9.8	44.0	38.7		9.1	22.9	3.2		9.8	41.9	0.3		8.8	20.8	41.6		8.6	33.4	58.7	L
9.4	48.3	31.5		10	32.7	16.0		9.3	42.1	37.4		9.7	23.2	18.5		9.5	36.2	28.3	
9.1	51.5	30.9		9.6	35.3	31.1		9.4	44.3	0.3		10	23.2	1.3		9.4	41.2	14.1	
9.8	24 10.9	2.8		9.5	44.9	31.6		9.8	57.4	35.7		9.3	31.0	32.9	Sj	9.0	46.0	1.8	K
8.5	13.1	27.5	Sj	9.2	45.1	10.9		9.3	35 1.0	16.7		10	41.5	39.1		9.8	46.3	39.1	
9.4	13.9	19.9		9.4	47.3	48.2		9.5	8.1	21.8		9.4	41 18.0	0.3		9.3	48 0.4	33.0	
10	15.6	6.1		9.6	58.4	56.4		8.3	8.8	0.3	K	9.2	18.3	6.9		8.8	8.9	33.0	K
9.7	17.3	48.7		9.8	30 8.2	25.3		9.5	16.2	48.5		8.5	26.6	49.0	K	9.0	9.6	36.5	
10	27.4	35.5		9.4	17.5	17.1		8.8	22.1	34.5	K	9.4	28.3	30.5		8.5	29.3	54.7	K
8.2	30.5	50.5	Sj	9.4	19.4	23.1		8.8	24.3	10.8		9.8	40.3	13.0		9.3	35.3	36.0	
9.3	40.9	14.1		9.8	24.7	3.2		9.2	24.4	54.7		10	45.2	23.4		9.5	41.4	22.2	
9.2	51.4	30.0		9.3	25.8	4.2		9.3	37.3	19.2		9.4	42 24.9	50.3		9.4	41.6	1.8	
9.5	53.2	22.7		10	32.3	31.6		9.1	37.8	36.4	K	10	28.1	53.3		9.4	49.8	30.0	
9.3	55.1	45.7		9.7	33.8	40.4		9.0	41.1	33.7	K	8.4	30.4	39.3	Sj	9.0	59.2	34.5	
9.7	58.1	11.8		7.1	40.9	24.4	L	8.8	42.1	49.5		10	32.0	46.0		9.2	49 5.7	21.1	
9.2	59.8	23.7		8.7	42.3	7.7	K	9.9	42.8	28.7		9.0	34.7	40.0	K	9.8	6.9	57.7	
9.8	25 3.2	2.9		9.4	45.7	10.5		9.1	52.4	10.9		10	35.5	43.2		7.3	19.5	36.8	K
10	4.9	1.1		8.9	52.1	0.2	K	9.4	58.2	21.3		8.1	42.4	57.0		9.0	21.1	45.0	Sj
9.2	6.9	32.7		8.5	52.3	38.2	L	9.8	59.6	8.9		8.6	47.4	12.5	K	9.5	34.3	50.8	
9.5	14.5	20.0		9.9	54.0	22.8		9.7	36 1.6	13.8		9.3	50.2	0.3		9.3	35.7	55.6	
8.9	26.8	24.2		7.1	31 0.6	48.0	K	8.9	9.8	53.4		9.3	43 4.4	45.4		9.5	37.8	3.0	
8.4	32.7	47.3	Sj	9.7	17.7	12.3		9.6	17.6	9.1		10	4.9	1.5		9.5	50.2	42.9	
9.5	32.9	45.4		9.7	21.0	56.6		8.8	19.1	5.5	K	9.7	6.1	50.1		9.4	50.8	45.2	
9.7	38.4	38.5		8.9	28.5	18.1	Sj	9.2	19.8	57.0		8.9	16.5	33.2	K	9.6	53.8	29.3	
9.5	39.4	46.9		9.7	31.5	7.7		9.7	24.7	17.7		9.7	19.1	47.5		9.1	50 12.7	26.8	
9.8	44.5	10.3		10	46.3	4.7		10	27.9	0.0		9.4	21.6	46.0		7.3	17.4	25.0	Sj
9.5	49.1	23.2		9.8	51.2	2.8		10	32.7	20.0		9.8	52.4	34.5		9.2	20.0	21.4	M
9.3	51.2	33.5		9.8	56.8	58.2		9.4	47.3	53.6		10	44 1.2	16.3		9.2	23.6	14.5	
8.4	51.8	38.1	K	10	32 3.4	36.6		10	37 4.5	26.4		9.4	4.0	26.3		10	30.3	17.7	
9.3	26 23.4	27.0		10	4.1	38.1		8.9	5.3	35.0		9.2	9.1	15.1		10	48.2	43.2	
9.8	43.3	7.2		9.8	8.8	22.1		9.8	6.2	26.2		9.7	10.6	7.8		8.7	56.5	14.6	M
9.4	46.6	18.9		9.3	13.5	57.0		9.7	10.0	29.8		9.5	12.7	42.3		9.0	58.1	1.0	K
9.5	58.2	57.6		8.9	20.1	17.1	K	10	12.8	13.3		9.6	14.7	34.9		9.8	51 5.4	13.1	
7.5	27 0.5	19.5	Sj	9.5	24.5	13.8		9.7	34.5	37.2		9.9	15.9	44.0		9.2	7.3	18.7	M
9.6	3.9	56.9		9.3	32.8	52.5		9.5	43.2	7.0		9.4	21.5	36.5		9.5	11.0	20.1	
9.3	16.2	1.3		9.7	39.8	54.5		9.1	45.1	37.2		9.5	38.9	32.7		9.4	22.5	48.4	
9.3	28.5	37.1		9.7	40.3	45.8		8.5	55.7	22.9	Sj	9.8	39.5	6.6		9.8	23.2	39.7	
9.1	33.5	6.1		9.4	42.0	57.3		9.6	58.4	2.5	K	8.9	45.5	55.9	K	9.2	40.1	21.4	
9.7	41.4	12.6		9.3	47.3	5.1		8.5	38 0.4	36.4	K	9.3	45.5	52.0		8.8	40.9	56.8	
9.1	47.1	34.7	K	8.6	54.2	11.5	K	9.5	12.4	38.8		8.5	47.2	33.7	K	8.7	49.1	7.5	K
9.3	49.7	13.9		9.6	59.7	32.9		9.5	15.9	39.1		9.8	58.5	13.3		9.5	52 1.8	7.9	
9.5	51.5	48.6		9.7	33 4.3	11.5		9.6	23.1	1.9		9.7	45 5.8	40.3		9.0	5.8	51.1	
9.8	52.2	24.7		9.8	6.9	0.4		10	25.5	7.2		8.8	6.0	3.1		9.8	8.4	12.1	
9.4	58.1	56.4		9.8	15.9	21.2		8.9	25.5	15.0		9.0	10.5	1.2		8.3	12.3	6.7	Sj
9.9	28 7.1	6.2		9.8	16.3	2.2		9.0	27.4	31.0	K	9.6	14.8	53.5		9.8	13.8	38.2	
10	12.7	23.9		9.5	19.3	8.4		9.7	32.1	12.0		9.0	21.9	54.8		9.5	16.0	16.6	
9.8	20.1	52.0		9.7	21.2	23.8		9.5	33.6	4.9		9.5	39.6	5.7		9.0	30.7	31.9	K
9.0	26.1	28.2	M	9.6	27.7	43.9		9.2	34.7	23.5		9.2	47.5	58.1		9.8	34.5	18.7	
9.2	31.1	38.7		9.3	29.3	51.6		9.8	34.9	4.6		8.4	48.9	36.2	K	9.5	46.2	11.8	
8.4	46.6	55.1		9.2	32.1	53.5		8.8	36.5	43.6	K	10	51.5	47.8		9.5	50.9	33.5	
9.8	47.6	31.5		6.3	34.5	51.3	K	7.7	47.6	10.6	B	8.6	57.8	2.1	K	10	55.6	57.1	
9.5	51.8	45.1		9.4	36.1	9.4		9.7	51.6	8.3		9.1	46 12.1	41.0	M	9.0	57.6	59.7	K
8.9	53.3	42.0		9.7	46.6	52.5		9.7	39 2.7	5.5		9.8	17.7	24.6		9.1	53 1.0	56.5	K

2301—2360

	7h—8h		−7°	
m	m	s	′	
9.1	53	2.7	56.4	
9.0		2.8	14.0	
9.5		3.9	10.0	
9.4		4.6	43.6	
10		12.0	35.4	
9.5		16.0	40.0	
9.5		22.2	27.8	
8.5		25.5	38.8	Sj
9.5		29.9	3.9	
8.3		52.4	15.1	
9.3	54	10.0	56.3	
9.1		11.5	17.4	
9.0		12.1	59.6	K
9.8		20.2	26.3	
9.7		25.7	25.4	
9.6		31.3	11.1	
9.3		33.3	49.3	
8.8		41.9	16.8	
8.4		48.2	48.8	L
8.8		56.6	1.2	Sj
8.9	55	3.1	11.1	
9.7		9.2	14.7	
10		16.7	9.5	
9.5		34.9	56.2	
9.4		44.1	46.8	
9.7		57.2	14.5	
9.5		58.5	2.8	
8.7	56	0.1	2.8	
7.0		29.9	46.2	Sj
9.0		39.1	57.5	
9.6		39.8	55.1	
9.7	57	5.8	54.8	
9.5		8.0	52.6	
9.8		8.3	19.6	
8.6		23.1	54.8	K
9.0		29.7	43.2	
9.0		31.0	35.1	
10		51.8	13.9	
9.8		52.5	19.6	
9.0		53.4	54.8	
8.9		55.8	59.4	K
9.5	58	11.0	35.8	
8.8		12.3	0.3	Sj
8.8		32.0	35.6	
9.4		33.5	34.7	
9.1		35.6	9.1	
8.2	59	9.9	21.2	K
9.2		15.4	48.1	
9.7		39.6	39.1	
9.4		54.1	54.9	
10		55.0	0.0	
9.5		59.4	35.0	
9.1	0	6.9	3.6	
9.4		28.5	4.9	
9.1		50.1	58.3	
9.0	1	8.0	22.2	
9.8		21.5	1.6	
9.6		40.0	50.6	
9.2		44.1	8.6	
8.8		49.9	5.1	K

2361—2420

	8h		−7°	
m	m	s	′	
9.8	1	57.2	36.7	
9.5	2	0.3	25.3	
9.3		1.3	58.0	
9.8		40.3	20.2	
9.5		43.8	51.4	
9.8		50.8	55.2	
9.2	3	0.9	21.2	
9.5		2.7	18.0	
9.8		11.8	47.3	
9.5		29.2	59.3	
8.8		35.7	18.1	
9.4		36.3	39.0	
9.5		38.1	11.9	
9.1		49.2	46.4	
9.5		54.7	18.4	
9.1		56.5	36.8	
9.0	4	2.9	33.3	
5.5		29.4	20.7	K
9.0		39.7	13.5	
9.5		41.2	2.7	
9.0		50.9	41.1	
9.1	5	25.7	45.3	K
9.5		29.9	29.3	
9.8		44.6	59.0	
9.5		56.5	22.6	
9.8	6	10.9	36.1	
9.3		44.2	13.1	
9.0		47.5	12.2	K
8.5		49.3	47.3	K
9.8	7	2.1	41.5	
9.0		17.5	38.3	K
9.4		30.3	44.2	
9.5		48.4	50.1	
9.5		53.7	58.5	
9.2		57.8	0.9	
9.2	8	7.2	4.8	
9.4		8.4	30.0	
9.0		9.7	28.5	
9.4		10.9	27.2	
10		14.0	29.6	
9.8		24.3	41.1	
9.0		29.8	56.4	
9.4		30.3	1.3	
9.1		42.0	11.3	K
9.6		42.4	15.0	
9.5		46.6	19.9	
9.4		48.1	42.0	
8.9	9	9.8	31.7	K
9.1		27.6	24.8	K
9.5		28.1	54.6	
10		33.3	7.1	
9.1		35.4	43.5	
9.5		42.8	43.6	
9.0		53.2	31.4	K
9.1		56.3	47.1	K
9.3	10	3.3	32.0	
9.2		34.5	36.6	
9.4	11	7.1	42.2	
9.7		16.2	28.2	
9.6		17.1	8.2	

2421—2480

	8h		−7°	
m	m	s	′	
9.7	11	18.4	6.7	
9.0		19.2	32.7	
7.0		19.9	7.1	Sj
9.5		21.5	20.4	
9.8		24.5	33.0	
8.8		35.4	27.0	
9.3		40.4	4.8	
9.4		41.2	46.2	
9.4		44.5	4.8	
8.8		54.3	10.6	K
8.5		59.8	2.9	K
9.5	12	5.0	33.9	
7.2		8.4	6.4	K
9.7		11.9	15.7	
9.8		40.5	22.5	
9.1	13	9.8	5.4	M
9.3		22.3	33.2	
9.5		30.4	54.1	
9.8		51.7	23.1	
9.5		53.5	20.3	
10		56.3	5.7	
9.1	14	2.1	43.7	
8.9		10.5	19.0	K
7.0		12.6	36.2	K
9.5		19.6	51.9	
8.0		30.2	43.9	K
9.2		30.4	18.1	
8.8		44.3	57.0	
9.5		57.0	10.8	
9.2		58.8	0.4	
9.4	15	28.3	12.8	
6.5		48.9	4.7	L
9.1		52.8	33.1	
8.6		54.1	15.9	
9.8	16	12.2	23.8	
9.5		21.9	54.1	
9.0		26.9	45.9	
9.1		27.9	7.6	M
9.8		30.8	4.2	
9.1		40.8	59.6	
9.5		42.4	51.2	
9.4	17	0.0	42.1	
8.3		4.7	56.5	L
9.7		8.8	3.0	
9.0		26.1	52.5	
8.9		29.4	51.7	L
9.5		30.2	48.1	
9.4		41.7	56.9	
9.1		42.5	17.2	
9.5		56.9	13.4	
9.8	18	3.2	0.7	
9.4		7.5	24.2	
9.3		10.8	6.3	
9.2		11.4	24.0	
9.1		22.3	35.8	
10		29.7	1.5	
10		30.6	4.2	
9.8		38.9	55.2	
9.0		41.2	47.4	
9.5		47.4	20.8	

2481—2540

	8h		−7°	
m	m	s	′	
9.8	19	9.2	20.5	
8.2		14.1	31.0	M
9.8		21.6	18.7	
8.5		27.3	36.9	K
8.3		47.0	59.6	K
9.8		59.2	0.8	
9.6	20	15.7	33.5	
10		19.8	16.7	
9.8		25.7	14.8	
10		30.3	16.9	
8.5		45.7	36.5	K
9.5	21	1.1	45.3	
9.4		4.4	21.1	
9.5		16.3	36.5	
8.0		19.4	43.9	K
8.5		31.0	42.6	K
9.4		31.3	3.0	
9.9		36.7	38.4	
8.0		43.8	3.9	K
9.6	22	29.0	22.8	
9.3		39.2	29.5	M
9.1		50.0	14.0	K
10		59.5	50.0	
9.1	23	3.0	37.1	
8.8		14.7	15.6	K
8.8		16.7	14.9	K
9.5		24.3	53.0	
8.6		25.0	31.4	K
9.6		40.5	42.8	
9.5		48.0	41.0	
9.5	24	1.8	30.4	
9.8		10.9	46.1	
10		11.9	52.1	
9.5		28.4	46.8	
8.2		29.8	53.7	K
9.8		44.0	52.6	
9.8		47.9	39.2	
9.2		49.0	45.4	
9.8		53.3	56.0	
9.4		55.5	37.1	
9.1	25	27.1	27.3	
9.8		27.4	54.9	
10		41.9	26.0	
9.2		46.6	31.1	
9.2	26	9.4	15.8	
9.7		11.7	5.6	
8.3		17.6	25.0	K
9.3		21.5	40.1	
9.5		49.2	21.2	
9.4		50.1	20.1	
10		57.0	38.4	
9.1		57.4	56.0	
8.5	27	9.3	48.3	K
9.4		12.2	28.6	
8.8		37.7	17.1	
9.2		54.9	53.1	
8.5	28	15.5	21.0	
9.5		20.3	12.1	
10		22.5	1.4	
5.7		23.2	29.7	K

2541—2600

	8h		−7°	
m	m	s	′	
9.8	28	30.7	49.2	
10		33.1	42.2	
10		34.9	54.8	
9.5		40.6	11.5	
9.3	29	17.9	19.7	M
9.1		25.7	13.6	
9.5		26.1	10.2	
9.8		26.6	32.0	
9.8		27.2	25.2	
10		32.0	5.2	
10		48.1	0.3	
8.3		58.5	18.6	Sj
9.3	30	3.0	26.0	
10		18.4	37.1	
9.5		21.3	53.5	
9.8		25.7	30.2	
9.0		27.2	4.8	K
9.5		39.0	16.1	
9.8	31	7.5	32.4	
10		9.1	28.0	
9.7		11.3	33.0	
9.3		22.3	11.2	
9.7		37.3	11.8	
10		43.5	39.4	
9.7	32	1.1	17.0	
9.0		4.7	31.2	
9.8		7.4	39.5	
9.8		17.7	39.7	
9.1		27.7	33.2	
9.0		30.0	41.9	M
9.6		43.4	7.8	
9.3	33	22.8	51.0	
8.3		31.5	17.8	K
9.0		36.6	26.6	K
9.2		39.2	26.1	
9.4		51.0	49.8	
9.8	34	7.9	37.3	
9.8		12.7	49.0	
9.5		22.3	9.2	
9.8		45.1	55.0	
8.5		48.7	44.9	K
8.6	35	8.3	36.4	K
8.7		11.6	52.9	S
9.1		25.4	3.3	K
9.8		25.7	55.2	
10		25.8	37.8	
7.0		26.5	58.5	L
8.9		46.8	19.7	K
9.8		54.9	46.6	
10	36	1.8	33.1	
9.6		19.5	50.4	
9.2		34.1	18.8	
9.3	37	14.4	1.9	
9.8		22.9	10.9	
8.6		27.3	55.3	
9.4		40.2	6.9	
7.6		46.1	44.0	K
9.8		56.4	57.4	
9.8		58.6	10.8	
9.9		58.6	44.0	

2601—2660				2661—2720				2721—2780				2781—2840				2841—2900			
8h		—7°		8h		—7°		9h		—7°		9h		—7°		9h		—7°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.8	38	14.6	45.0	6.3	48	23.0	25.1 K	8.4	0	2.1	12.7 K	9.5	12	57.9	37.9	9.8	27	17.6	36.4
9.8		19.4	14.0	9.2		26.0	46.3	9.6		20.0	23.6	8.7	13	9.3	46.0 M	9.1		45.0	33.2
9.1		19.5	41.2 M	9.3		51.5	30.4	10		21.0	58.5	9.4		12.0	40.7 M	8.0	28	29.0	56.9 Sj
9.1		23.1	45.0	9.1		59.0	43.8	10		21.9	36.6	8.8		31.6	5.1 K	10		30.7	13.3
9.0		44.9	11.2 K	8.7	49	19.9	24.4 Sj	8.3		24.4	1.9 K	7.7		36.4	7.4 K	9.5	29	21.1	2.7
10		48.6	27.8	10		21.1	0.0	7.9		50.4	13.5 K	9.3		45.0	5.3	8.2		35.2	58.2 K
8.0	39	0.1	3.3 K	9.7		23.2	38.1	9.4		54.9	47.0	9.5		57.9	41.2	9.2		56.5	18.7 M
9.7		8.0	18.2	9.4		28.3	16.4 Sj	10	1	0.0	33.0	9.2	14	19.8	41.4	9.8	30	7.7	45.6
8.7		37.5	56.5 K	8.9		43.7	37.5 Sj	9.4		13.2	30.1	8.9		44.8	47.7 K	10		24.2	42.7
9.9		55.8	7.5	9.6		48.0	32.3	9.7		17.4	20.7	8.8		51.0	21.8 K	9.2		46.6	40.4
10	40	3.6	31.3	9.0	50	16.9	12.6 M	10		27.9	16.0	8.3	15	24.7	50.8 Sj	9.2	31	6.5	35.1 M
9.1		9.8	46.7	9.5		18.3	23.8	10		57.9	11.5	8.6		44.4	1.1 K	8.8		8.9	25.6
9.9		32.2	34.5	9.9		41.8	36.3	10	2	2.3	59.3	9.2		45.9	16.4	8.8		23.0	0.2 K
9.5		42.7	32.7	9.6	51	0.7	36.3	9.0		4.2	39.9 M	9.1		48.2	27.3	10		48.3	47.4
9.1		43.9	50.1	9.5		2.9	43.7	8.2		7.6	35.8 K	8.2		58.6	5.8 K	9.5		49.3	20.0
9.6		59.9	39.5	10		14.6	32.8	8.8		31.1	35.3 K	10	16	1.0	41.5	9.2	32	29.9	53.9
7.8	41	9.5	26.3 K	9.0		18.8	59.1 K	9.2		34.5	33.7	9.6		14.0	57.6	9.0		37.9	28.1 Sj
9.4		11.9	38.7	9.8		34.4	45.3	9.5		37.4	16.8	8.5		14.2	3.2 K	9.8	33	3.2	11.8
10		26.3	54.5	9.4		34.6	25.8	8.3		38.8	50.7 L	9.8		22.2	54.5	9.8		3.4	27.5
9.6		32.0	13.1	10		47.0	0.7	9.1		43.4	30.6 K	9.8		36.8	8.0	9.0		8.6	11.6
9.5		44.7	51.1	9.8		50.0	46.0	8.8		48.5	59.3 K	9.5		52.8	15.0	9.8		53.2	47.9
10		44.8	8.0	9.6		55.8	58.4	9.7		49.4	9.5	9.3	17	31.1	26.4	9.7	34	4.4	13.7
9.1		53.9	45.3 K	9.7	52	4.4	20.6	9.5		57.4	50.5	8.8		37.3	34.5 Sj	9.5		18.1	40.8
9.2		56.0	20.6	9.0		26.9	41.7 Sj	9.8	3	22.0	7.0	9.4		39.3	30.8	9.5		31.5	51.2
9.4	42	5.2	51.6	9.6		28.5	30.5	10		27.8	42.0	9.2	18	44.0	11.7	9.6		41.8	11.5
9.2		14.3	54.3	9.7		32.9	24.9	9.8		38.9	46.8	8.7	19	17.0	58.7 Sj	9.4		56.4	13.6
8.7		16.4	24.7 K	10		51.4	54.8	9.1		51.4	0.5	8.8		19.4	0.4 B	8.2	35	2.6	6.5 K
10		20.6	38.2	9.1	53	9.1	6.3 M	9.7		57.8	16.2	9.2		34.6	26.7 M	9.1		9.2	21.9
10		22.5	49.6	10		10.7	9.4	10	4	11.6	27.5	9.7		50.5	25.5	9.0		9.6	13.7 K
9.7		23.8	50.5	10		13.8	40.7	9.3		24.4	27.8	9.1	20	6.9	24.6 M	9.8		10.3	10.8
9.2		58.0	11.3	9.5		15.6	34.8	9.3		24.5	41.9	9.4		21.3	8.6 M	9.1		16.2	25.2 Sj
9.5		58.4	38.2	10		17.2	36.5	9.4		32.6	58.0	9.8		47.0	31.6	9.6		29.2	27.8
10	43	0.5	28.1	9.1		30.6	17.5	9.8		49.9	2.5	7.2	21	3.3	5.4 L	9.0		32.7	26.5 K
8.5		40.4	32.8 M	9.3		48.1	6.7	8.7		53.0	30.7 Sj	8.0		11.6	27.7 L	10		58.5	1.9
9.4		41.3	17.4	9.5	54	12.2	9.8	9.7	5	11.9	1.7	9.8		34.1	49.7	9.6	36	56.8	28.8
9.7		42.0	8.5	7.9		16.3	21.4 L	10		13.6	39.1	9.1		41.8	54.3 M	9.5	37	2.2	45.8
8.5	44	49.6	4.2 K	9.4		22.9	42.2	10	6	2.7	12.7	9.6		43.4	8.5	10		2.9	14.6
9.8		51.5	1.0	9.4		25.9	44.3	9.5		4.3	43.6	9.1		47.5	29.1 M	9.4		20.3	29.4
8.5		55.9	22.9 K	9.0		34.9	58.8	8.8		8.7	42.8	8.0		47.9	50.1 K	9.3		35.7	23.8 M
9.9	45	1.7	33.6	9.3		43.2	9.4	9.8		32.8	25.5	9.6	22	24.5	18.8	9.0	38	1.9	17.0 K
8.5		19.5	11.3 K	7.3		51.5	48.2 Sj	9.7		36.7	8.6	9.4		32.3	13.8	9.2		12.0	13.9 M
9.5		22.9	34.1	9.8		51.7	10.0	9.1	7	11.8	41.8	9.7		44.3	38.0	7.5		15.7	48.6 K
10		48.6	33.7	9.8	55	9.9	1.5	8.9		12.5	40.7 M	9.8	23	22.8	11.7	10		30.7	6.3
9.7		50.4	35.0	8.7		37.3	55.9 Sj	10		36.6	30.2	8.6		32.9	42.8 Sj	9.5		35.0	39.8
9.6		51.0	26.3	9.8		57.1	22.5	9.8	8	2.1	49.1	9.3		34.0	19.0	9.3		59.0	57.3
9.6	46	3.4	18.8	10	56	21.4	47.4	7.0		15.5	52.7 K	8.9		43.6	46.6 K	10	39	8.8	55.8
9.0		5.2	10.8 Sj	9.0		27.1	5.0	9.3		15.8	23.7 M	8.9		44.7	34.9 K	10		16.9	5.1
9.8		9.0	55.7	9.8		35.8	23.3	8.8		18.8	14.5 M	8.5		59.0	57.6 K	9.5		34.6	42.9
8.5		9.5	10.2 Sj	9.0		39.7	49.4 K	10		32.5	42.2	8.3	24	14.1	30.5 L	9.1		50.8	51.2 Sj
9.4		24.9	24.5	9.8		51.3	59.9	9.7		33.1	31.7	9.6		20.2	2.5	9.3	40	22.1	39.1
9.4		41.8	56.7	10		51.4	1.4	9.3		52.2	13.0	8.9		27.6	32.2 K	9.5		27.7	14.0
9.3		42.2	25.4	9.0		52.7	38.3	7.5		57.4	45.1 K	9.3		54.6	56.4	9.9		34.8	57.1
9.1		43.2	5.8 K	9.8	57	16.8	57.5	9.6	9	10.5	19.6	9.7	25	0.8	16.8	9.3		37.8	50.9
9.5		49.0	44.8	8.2	58	34.7	1.7 K	9.1		59.8	50.4	8.8		16.2	5.8 K	8.7		41.7	49.3 K
9.9		59.8	16.2	9.0		35.3	41.1 K	10	10	3.5	44.6	9.8		37.1	59.5	8.1		53.9	29.9 L
10	47	18.3	16.6	8.5		47.8	57.6 Sj	9.1	11	8.2	29.5	7.0		54.6	51.9 Sj	9.5	41	1.8	3.5
9.3		46.3	39.3	9.6	59	2.8	58.1	9.5		57.2	58.3	9.2	26	9.6	28.7 M	9.5		5.3	18.8
7.8		48.1	16.2 K	9.1		9.5	32.3	8.2	12	14.9	44.8 Sj	9.5		14.1	4.8	9.0		39.7	49.6 M
9.1	48	7.1	7.0	9.7		12.9	32.7	9.0		27.0	17.8 M	9.4		16.6	4.8	10		45.8	6.1
9.1		10.6	13.7 M	9.4		59.8	15.1	9.8		52.3	4.6	9.3		35.3	3.7 K	9.0		53.6	48.5

2901—2960				2961—3020				3021—3080				3081—3140				3141—3200			
	9h		−7°		10h		−7°		10h		−7°		10h		−7°		10h—11h		−7°	
m	m	s	′	m	m	s	′	m	m	s	′		m	s	′		m	s	′	
9.5	42	3.4	44.5	7.5	0	10.8	1.1	B	7.9	16	1.8	2.5	Sj	8.5	31	35.3	28.2	K	8.6	47	59.1	22.7	M
9.5		46.4	37.2	9.7		58.5	33.5		9.5		6.6	43.2		9.0	32	13.9	51.8	K	9.4	48	37.0	36.3	
10	43	11.0	7.2	8.8	1	12.4	14.7	K	9.7		17.7	40.9		7.7		15.1	12.0	K	9.4		59.5	30.1	
9.2		29.7	14.3	8.8		15.3	0.3	K	9.6		29.6	0.8		9.5		39.4	29.6		9.2	49	9.7	50.2	K
9.2		42.9	38.2	M	9.3		21.3	24.7	10	17	0.0	0.9		9.2		47.2	5.1		9.5	50	4.1	51.3	
9.0	44	13.2	53.1	K	9.4		49.8	19.0	8.9		24.1	55.5		9.5	33	1.3	4.0		10		17.5	7.4	
9.6		19.1	6.6		10	2	2.0	11.9	10		34.4	5.1		9.6		14.9	20.3		8.8		20.5	31.0	M
8.9		42.3	15.8	K	9.5		4.4	29.1	9.9		38.8	10.3		9.5		30.6	43.2		9.8		45.0	26.4	
6.0	45	20.1	25.3	K	9.1		22.3	22.4	K	9.8	18	34.7	32.2		9.0	34	1.6	11.9		9.0		46.5	4.7	
9.2		36.3	6.1		9.1		37.2	21.9	K	7.5		41.5	7.0	Sj	10		18.5	7.1		9.3		57.6	15.1	
9.8		44.2	2.7		9.5		47.9	6.3		9.6		52.6	29.9		10		18.7	15.2		9.8	51	14.7	42.0	
9.3		49.4	36.2		6.2		55.8	41.5	K	10	19	11.5	37.6		9.8		30.8	49.7		9.5		33.1	36.7	
9.2		55.0	3.2		9.4		57.7	11.5		10		22.1	53.7		9.1		34.8	58.7	M	9.2	52	10.9	12.6	
9.2		59.7	12.3		9.3	3	3.4	28.1	M	9.4		42.3	38.4		7.3		35.9	18.1	K	9.2		39.0	57.0	
9.2	46	20.1	21.4		9.3		3.9	12.3		9.3		46.9	56.4		9.1		55.7	25.5		10		58.4	32.7	
9.4		33.2	57.0		9.4		21.2	19.2	M	10		49.1	30.0		10	35	0.8	17.3		9.9	53	0.2	26.6	
10		53.3	32.6		6.0		43.3	42.1	K	9.8		53.4	15.7		6.9		11.3	57.9	K	9.8		19.8	24.2	
10	47	0.8	19.4		9.7		52.9	44.7		9.2	20	1.4	43.3		9.8		14.1	13.9		9.0	54	2.0	28.5	M
10		9.8	31.6		8.3	4	58.4	7.0	Sj	8.1		8.1	3.7	K	9.0		17.1	34.9		9.8		51.4	22.7	
8.4		29.1	7.5	K	9.9	5	25.6	35.1		10		20.5	1.3		9.5		41.9	12.3		10	55	4.8	9.4	
9.2		37.0	16.3	M	8.0		35.4	9.4	K	9.3		35.4	10.2		9.8	36	36.4	56.5		9.5		11.1	7.2	
9.4	48	3.0	0.7		8.4		56.2	17.1	K	8.7	21	11.7	33.0	B	8.8		56.0	52.4	Sj	9.2		11.4	27.2	M
10		13.3	33.6		9.4		57.3	9.7		9.4		43.3	57.0		9.3	37	14.9	38.4		8.2		42.8	36.5	Sj
10		18.5	36.7		9.8		58.5	14.4		9.1	22	2.0	22.0		9.0		50.1	16.1	K	9.8	56	10.7	12.5	
9.5		36.1	10.9		8.2	6	3.4	43.7	L	9.4		18.5	50.7		8.2	38	11.4	50.6	K	9.2		37.0	9.9	
9.2		59.9	3.5		9.1		7.2	46.7		9.8		21.4	49.8		9.0		25.2	4.8		9.2		43.4	27.0	
9.4	49	24.7	8.5		9.2		23.1	22.2	K	9.8		41.7	9.7		8.8		51.7	17.5		9.5	57	17.4	34.3	
9.7		28.8	56.2		9.5		46.6	40.8		9.9		41.8	59.2		9.4	39	2.5	58.8		9.8		22.1	54.6	
9.4		30.4	15.5		7.3		54.9	15.9	K	9.7		44.1	26.4		9.2		5.1	21.4		9.3	58	29.8	21.9	
10	50	5.9	7.5		9.1		59.7	36.3	K	9.8	23	13.9	9.7		9.6		13.3	50.2		9.4	59	13.4	3.7	
8.6		15.6	29.2	M	10	7	11.7	47.2		9.1		32.9	9.3		9.4		20.2	0.0		9.6		20.5	1.7	
10		59.6	29.8		9.4		48.3	5.3		9.0		38.4	42.4	M	9.5		46.1	58.1		9.8		42.9	31.4	
10	51	24.0	3.7		9.8		59.7	47.3		9.3		42.7	57.5		9.5		53.2	8.4		9.2		53.2	14.0	
8.5		30.5	33.8	Sj	9.8	8	3.1	54.2		9.4	24	6.9	47.8		9.0	40	14.4	20.4		8.5		59.0	49.0	M
9.4		35.1	18.9		9.9		25.9	27.8		8.2		59.5	27.0	L	9.3		31.8	38.1		9.0	0	4.5	34.1	M
7.8	52	21.0	10.0	K	9.7	9	13.2	37.1		8.7	25	7.9	47.8	M	8.8	41	21.7	31.9	M	9.3		16.3	47.5	
9.5		52.3	28.5		9.3		24.5	13.9		9.5		44.7	24.3		9.0		31.7	58.6		9.4		26.3	18.7	
9.1	53	10.4	3.4		8.9		36.7	55.5	Sj	9.1	26	15.8	47.5		8.6		41.7	24.4	M	9.5		47.3	5.0	
9.4	54	4.2	48.9		9.2		41.0	16.7		9.5		18.6	34.5		9.5	42	3.2	44.5		9.3		50.8	9.2	
9.4		16.9	39.1		9.4	10	17.2	26.2		9.1		57.0	25.6	K	9.4		16.0	50.9		9.1	1	11.0	22.3	M
9.5		34.3	28.1		5.5		25.1	20.7	K	8.6	27	34.5	10.7	Sj	9.5		34.7	53.3		9.8	2	17.3	9.0	
9.1		43.8	28.0	M	8.9		45.4	9.8	M	9.5		38.3	41.3		10		48.1	30.0		9.1		33.6	37.8	
9.3		58.7	4.3		9.7	11	16.6	42.2		10		40.6	35.2		9.5		59.3	47.2		9.4		35.3	55.5	
9.0	55	17.6	22.1	K	10		28.1	10.9		9.1		46.3	12.5		8.3	43	11.8	42.1		9.5	3	27.4	0.3	
9.6		44.1	20.5		8.7		29.8	56.2	K	9.4	28	33.3	11.5		9.8		21.1	4.1		9.0		44.3	14.2	
8.3	56	2.1	52.6	K	9.3	12	11.0	2.0		7.7		35.8	46.8	K	9.1		36.1	58.7		9.0		45.9	27.7	
9.5		4.2	53.4		9.3		43.7	58.6		10	29	7.9	52.9		9.4		44.0	18.6		9.4	4	6.6	3.6	
8.6		37.9	40.8		9.7		47.0	10.8		9.6		25.0	19.4		9.8	44	4.9	59.0		8.8		10.0	53.0	
9.5		58.5	16.9		8.8	13	0.2	14.3	M	8.2		27.7	57.8	K	8.5		24.0	18.0	M	9.1		11.0	28.6	
9.7	57	51.3	34.3		9.4		34.7	49.1		8.4		39.4	1.6	K	8.5	45	8.2	49.0	M	9.6		31.9	50.8	
neb	58	0.8	1.2		8.7		36.5	15.3	K	9.3		44.2	43.6		9.5		19.3	49.2		9.3		59.8	38.2	
9.5		8.3	24.2		8.4		39.9	49.9	K	9.0		56.8	11.8		9.6		41.6	2.5		9.2	5	15.7	32.9	
10		11.0	57.9		9.7		51.6	13.7		9.1	30	0.5	30.3		9.0	46	14.0	18.1	K	9.6		20.9	2.1	
9.4		34.6	0.6		8.2		56.8	58.8	K	9.8		3.6	55.6		9.5		14.6	31.8		9.0		46.6	25.5	M
9.5		43.1	20.7		9.4		58.7	31.6		9.6		9.4	43.2		9.5		35.2	37.1		9.1		55.8	15.9	
9.3		59.2	41.3		9.5		58.7	7.4		9.4		24.1	7.1		9.2		54.7	43.4		9.1	6	41.7	48.2	
9.2	59	19.6	51.2		9.5	14	19.0	36.7		9.4		35.6	18.3		9.8	47	17.5	13.7		7.2		53.1	32.4	K
9.4		22.7	32.6		9.3	15	1.7	57.7		9.1		52.3	44.2	M	8.5		21.0	56.0	K	9.3	7	12.6	59.9	
9.7		56.6	7.4		9.2		45.1	27.0		9.0	31	18.3	47.0		8.0		28.7	36.5	Sj	9.4	8	1.8	2.4	
9.1		59.0	20.3		9.7		54.8	26.1		9.8		35.0	34.7		9.9		35.9	17.3		9.8	9	6.5	0.7	

3201—3260

	11h		−7°	
m	m	s	′	
9.5	9	10.5	20.5	
9.2		17.9	52.9	
9.7		36.3	59.7	
9.2		37.1	26.4	
8.8		41.8	43.3	K
9.3	10	24.7	38.7	M
9.8		26.6	59.8	
9.5		36.6	17.8	
9.6		47.4	6.8	
9.0	11	0.8	19.3	M
9.0	12	10.2	48.5	M
9.4		53.0	42.4	
9.0	13	15.4	47.3	M
9.1		24.2	44.1	M
9.4		26.6	51.8	
9.2		46.1	39.5	K
9.1		50.7	3.1	
9.8	14	11.2	43.4	
10		28.7	41.7	
9.0		51.0	31.1	
10		52.5	29.5	
9.6	15	5.7	51.5	
8.2		9.8	16.4	K
8.4		27.1	18.2	K
9.4		34.1	6.0	
9.8		40.6	14.7	
10	16	27.8	59.1	
9.4		33.7	52.6	
9.2	17	4.5	28.3	
9.4		26.1	41.9	
8.0		46.0	40.3	K
9.5		51.1	42.1	
8.3	18	9.0	3.2	K
9.5		28.1	46.4	
10		30.2	43.5	
9.4	19	31.0	7.2	
9.1	20	7.7	14.4	
9.4		13.3	26.1	
9.5		21.3	22.3	
8.7	21	46.5	13.2	K
9.3		59.9	57.5	
9.4	22	2.5	13.0	
9.8		7.0	57.0	
9.2		38.0	15.6	
9.5	23	21.6	45.4	
9.2	24	6.6	26.1	
9.0		20.8	48.1	M
9.5		38.6	47.2	
9.5	25	24.2	12.1	
6.3		25.6	1.8	K
10	26	48.1	41.7	
9.8		48.8	30.9	
9.5		50.9	12.5	
10	27	22.4	21.7	
8.8		30.5	7.6	K
9.7	28	14.5	4.6	
9.8		41.4	14.1	
9.5		50.0	23.9	
9.3	29	1.4	11.1	
9.5		6.2	47.0	

3261—3320

	11h		−7°	
m	m	s	′	
9.5	29	12.5	46.9	
9.7	30	12.4	26.1	
8.5		21.1	20.8	K
9.5		26.1	41.7	
9.5		40.1	41.9	
9.5		55.7	43.7	
9.5		58.4	41.0	
9.2	32	9.2	53.6	
9.8		47.4	3.7	
9.8		54.6	49.1	
7.0	33	13.6	35.7	B
9.2		24.1	45.1	
9.5	34	39.7	36.0	
9.5	35	21.6	46.0	
9.5		36.9	45.1	
9.1		39.2	53.9	
8.7	36	19.6	14.6	M
8.5	37	5.9	17.0	K
8.5		13.4	1.3	K
9.5		28.8	1.3	
9.5		35.0	43.1	
9.0	39	5.9	28.4	
9.4		10.5	38.3	
9.9		13.1	45.4	
9.2		16.2	54.4	K
9.4		25.0	39.0	
9.8	40	0.0	32.3	
8.5		35.6	49.2	M
9.7		38.2	11.1	
9.1		39.7	19.9	WC
9.4		39.9	30.5	
9.6	41	25.5	38.3	
9.5		36.0	35.3	
9.3	42	8.0	6.5	
8.7		26.6	15.2	K
9.6		37.5	41.8	
10		43.7	58.5	
9.0		53.0	47.8	
10	43	15.0	4.6	
10		29.9	7.1	
9.7		40.0	4.7	
9.1		44.2	25.9	
7.0		47.2	11.0	K
9.5	44	23.5	48.7	
9.4		34.9	35.7	
9.0	45	12.3	27.8	K
9.2		13.2	7.0	
9.4		27.3	28.1	
9.9		27.7	55.4	
10	46	24.7	0.5	
9.4		34.4	35.6	M
9.6		40.2	12.7	
9.1		40.3	54.1	
9.1	47	39.8	30.1	M
9.5		41.6	55.2	
8.5	48	18.7	23.9	K
9.8		20.3	32.8	
9.9		25.9	40.1	
9.4	49	30.2	41.9	
9.2		43.5	58.0	

3321—3380

	11h—12h		−7°	
m	m	s	′	
10	49	53.0	50.9	
6.6	50	20.8	44.7	L
7.6		21.2	28.2	L
9.5		45.6	58.1	
9.6	51	5.6	30.6	
8.5		17.7	11.9	M
9.4		26.2	43.1	
9.4		28.7	36.0	
9.0		32.4	15.3	M
9.5	52	40.0	20.2	
8.9		49.1	0.6	K
8.0	54	1.6	20.9	K
9.5		3.9	26.1	
9.0		17.2	34.3	K
9.5		31.6	6.9	
9.5		36.1	30.0	
9.4	55	34.8	56.5	
9.3		44.2	54.8	
7.7	57	18.6	10.3	Sj
8.3		35.1	43.1	K
9.4	58	25.0	12.5	
9.1		26.3	20.1	
9.3		47.5	25.2	
9.5	59	18.5	5.1	
7.0	0	22.4	40.9	K
9.7		28.2	17.6	
9.5		33.1	43.2	
9.3		54.9	52.4	
9.3	1	12.5	18.6	
9.8		17.2	24.1	
9.5		30.0	59.2	
9.4		52.1	49.2	
9.8		59.9	7.8	
9.0	2	13.1	45.5	
9.7		32.1	2.2	
9.2		54.3	59.4	K
9.7		55.2	15.1	
9.4	3	3.4	27.9	
9.5		40.9	42.6	
8.7		52.0	4.9	K
9.5	4	2.1	11.0	
9.5		5.8	45.9	
9.7		52.0	11.8	
9.4	5	13.9	46.2	
9.5		23.6	7.9	
9.5		47.3	27.9	
8.5	6	10.2	29.7	K
9.0		21.7	18.9	L
9.5		29.1	16.1	
8.9		50.3	46.5	M
9.1		54.8	58.9	
9.8	7	0.6	26.0	
8.5		29.8	48.7	
8.9		47.2	39.3	M
9.5	8	9.2	21.9	
9.0		15.8	46.3	M
9.0		26.9	10.6	
9.5		54.7	27.0	
10		55.0	6.3	
9.3	9	15.2	32.2	

3381—3440

	12h		−7°	
m	m	s	′	
9.8	9	24.8	38.0	
9.6		49.1	0.7	
9.5	10	4.8	58.4	
8.7		9.4	35.1	L
9.1		18.1	22.6	M
9.6	11	12.6	9.6	
9.4	12	13.6	31.8	
8.5		37.4	19.5	K
9.5		41.3	54.3	
9.3		48.5	0.9	
9.5		54.1	34.5	
9.5	13	2.3	40.8	
9.4		32.5	14.6	
9.5	14	7.6	34.9	
9.0		16.0	6.5	K
9.4		23.9	4.3	
9.5		29.4	53.0	
8.5		36.7	45.0	
9.5		44.2	48.1	
9.1	15	11.0	25.6	
8.6	16	28.0	34.1	K
9.5		50.3	42.3	
9.5	17	44.2	19.8	
9.1	18	6.8	29.5	
9.5		8.1	45.1	
9.0	19	22.8	49.3	K
9.5		44.9	8.6	
9.3		48.4	13.9	
6.3	20	27.7	52.4	K
9.3		42.8	20.7	
9.0	21	10.0	28.4	Sj
9.5		31.4	8.9	
9.3		48.1	48.8	
9.5	22	22.8	12.0	
9.4		40.3	0.4	
9.4		40.9	23.8	
9.2		44.8	21.9	
9.1	23	13.7	14.2	
9.5		43.1	42.5	
8.8		58.3	21.6	
9.2	24	4.0	51.8	
9.2		7.5	43.3	
8.3		33.0	48.4	Sj
9.5		51.9	16.1	
9.3	25	15.6	50.9	
9.5		27.5	52.6	
9.1		36.7	39.5	
9.2		44.8	23.6	
9.4	26	1.9	18.4	
9.3		21.8	39.5	
9.4		30.0	40.8	
9.5		33.3	4.3	
9.2		34.9	8.1	
9.1	27	3.4	35.5	
9.0		12.3	15.5	
9.8		49.4	33.4	
10		50.0	25.2	
9.8	28	3.2	58.8	
8.7		9.5	49.5	K
9.8		13.4	30.7	

3441—3500

	12h		−7°	
m	m	s	′	
9.4	28	25.7	21.8	
9.4		45.3	30.4	
7.3	29	53.1	29.7	K
9.4		53.4	48.0	
9.4	30	29.9	49.4	
9.1		39.8	27.7	
9.5	31	14.3	35.2	
9.0		20.7	58.8	
9.5		31.6	21.5	
9.5		34.9	29.3	
8.8		35.2	7.0	K
5.0		45.9	11.7	K
9.5		52.0	4.8	
8.8		54.4	13.6	K
9.5	32	1.6	30.4	
9.5		46.9	49.2	
9.7		56.7	2.3	
7.5	33	11.9	38.8	Sj
9.4		19.3	0.8	
10		27.9	48.3	
9.3		29.2	59.2	
9.2		31.0	57.8	K
8.9		49.0	58.8	K
10		51.7	17.7	
9.3	34	25.1	1.3	
9.7		39.6	2.5	
8.8	35	35.6	48.7	Sj
9.6		42.5	42.0	
9.5		50.6	50.6	
9.7	36	8.2	54.8	
9.4		13.6	41.6	
10		18.4	40.9	
9.9		24.0	43.9	
8.6		36.8	28.5	K
10		40.2	27.1	
8.8		43.6	3.7	K
9.4		50.3	52.8	
7.3	37	29.8	44.0	B
9.3		49.5	14.6	
8.5		58.4	53.1	B
9.1	38	12.2	1.0	
9.3		46.1	4.8	
9.5		53.1	4.1	
9.6	39	3.8	42.9	
9.5		32.3	50.2	
9.5	40	22.6	31.0	
9.5		36.8	50.2	
8.8		59.2	15.1	
10	41	9.4	12.8	
9.4		30.8	52.2	
9.5		52.3	52.9	
9.8	42	50.0	10.9	
9.5	43	19.7	46.8	
9.5		42.2	34.9	
10		58.0	11.3	
9.3	44	14.4	56.2	
8.4		32.5	43.7	M
10		56.3	0.1	
10	45	5.6	37.5	
9.4		10.9	21.2	

3490: neb GC 3229

3501—3560				3561—3620				3621—3680				3681—3740				3741—3800			
	12h−13h		−7°		13h		−7°		13h		−7°		13h		−7°		13h−14h		−7°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
8.4	45	14.0	55.1	L	9.3	4	34.6	21.5		9.5	20	22.9	24.3		9.1	35	52.8	26.4		9.3	50	43.0	2.4	
9.4		30.5	9.8		8.8		45.2	42.2	K	9.2		46.3	48.4		9.0	36	8.4	16.8		9.2		44.4	35.1	
8.0	46	5.9	2.8	K	8.8		53.0	32.5	Sj	9.5	21	26.1	40.8		9.5		23.1	10.5		9.8	51	16.4	7.6	
8.8		10.3	57.1		9.3	5	13.5	56.1		10		28.0	17.3		9.0		26.4	1.9	K	9.8		23.3	2.2	
9.1		39.7	20.2		9.4		14.4	57.1		10		46.0	9.7		8.5		35.0	45.3	Sj	9.6		44.3	46.2	
9.5	47	15.5	19.2		8.6		42.9	9.9	B	10		55.2	26.6		9.8	37	2.8	49.1		9.8	52	11.4	6.2	
9.5		24.2	45.1		9.2		46.0	48.0		9.8		56.7	12.7		9.5		3.2	4.0		10		21.3	42.4	
9.1		40.7	50.8		9.6	6	11.7	55.0		9.8	22	15.9	7.4		10		30.8	19.4		6.5		26.6	27.4	K
8.9	48	4.4	56.2	K	9.4		25.7	20.9		9.3		35.5	55.8		10		57.8	19.0		9.8		32.2	35.2	
9.1		16.9	24.2		9.3	7	1.7	28.2		10		38.8	50.7		9.8	38	0.3	3.3		8.2		54.2	38.5	K
10		42.2	23.9		8.9		32.4	12.1	K	9.1		42.8	50.5	M	9.8		13.2	24.2		8.0	53	13.5	22.0	K
9.1		52.3	42.7	B	7.8		56.4	17.2	Sj	9.5		48.0	48.3		9.9		14.4	15.2		9.2		19.7	9.6	
9.5	49	0.6	24.4		9.7	8	1.2	43.0		8.1	23	19.2	6.7	K	9.9		18.0	34.7		8.5		23.3	44.8	K
9.3	50	9.6	55.8		9.8		25.2	39.0		9.7		36.9	58.8		8.5		18.0	3.8	K	8.9	54	1.0	25.1	M
7.7	51	28.6	57.0	K	9.4		39.6	41.2		8.2		55.6	15.2	K	9.5		19.2	23.0		8.5		10.7	35.1	K
9.5		33.9	6.5		9.6	9	11.1	34.8		9.9	24	13.1	14.8		9.6		30.7	31.5		10		50.8	36.7	
9.0		37.1	46.7		8.3		24.2	38.1	K	9.5		42.7	19.5		9.3		43.7	59.3		10		52.4	7.2	
9.5	52	24.9	7.1		9.3		27.0	0.0		9.2		43.9	17.7	M	8.8		43.9	42.8	Sj	9.5	55	23.6	19.6	
9.8		34.5	21.3		9.1		37.6	33.6	M	7.0	25	37.0	42.0	K	10		49.0	39.9		9.3		53.5	50.7	
9.4		45.3	52.0		9.6		56.6	13.6		9.8		41.6	7.4		8.5	39	44.0	46.4	K	9.5		53.7	45.7	
8.9		52.1	51.6	K	10	10	2.9	56.7		9.6		44.8	25.5		9.8		54.1	54.5		9.3	56	20.2	0.6	
8.9		57.2	50.9	K	6.7		9.5	57.8	K	7.5		52.0	41.3	K	9.0		57.0	45.3	K	8.2	57	44.8	17.7	Sj
9.1	53	1.9	12.2		9.6		14.6	31.0		7.0	26	42.2	52.5	K	10	40	4.7	15.4		10	58	14.6	4.5	
9.4		23.4	2.5		10		50.9	55.8		9.4		55.7	50.9		8.0		26.4	17.7	K	9.4		29.7	31.3	
8.5		51.2	38.9	K	10	11	6.2	27.6		9.5	27	3.2	58.2		9.6	41	3.6	58.7		9.5		52.7	46.5	
9.4	54	21.0	48.1		10		6.4	7.1		9.0		9.0	35.9	K	8.0		12.3	28.1	K	9.8	59	15.1	23.9	
9.8		31.5	49.2		8.5		10.0	22.7	Sj	8.8		11.2	16.4		10		17.3	10.8		9.2		17.4	25.6	
9.2		52.5	18.8		10		38.2	11.6		10		14.3	41.1		9.0		56.3	32.1	K	9.7		20.9	10.6	
9.4		58.9	11.7		9.7		43.2	6.2		9.5		23.0	23.7		9.4	42	17.1	12.3		9.2		26.1	59.5	
9.8	55	26.3	26.5		9.6	12	2.7	43.9		9.5		35.6	4.3		9.2		25.9	3.7	K	8.0		29.7	45.0	K
9.0		32.6	8.5	M	9.8		19.8	10.4		9.8		41.1	57.8		9.0	43	1.2	24.5		9.1		38.6	25.5	K
9.4		40.1	49.9		9.4		51.7	10.7		8.8	28	23.2	50.1	K	7.0		13.9	3.4	K	9.4		44.9	2.5	
9.1		48.9	31.5	M	8.7	13	5.8	58.6		10		31.6	5.4		9.7		14.7	17.0		10	0	31.3	8.0	
9.5	56	0.4	39.4		9.5		15.5	28.8		9.0		35.8	21.6		9.5		47.6	38.0		9.5		32.8	49.0	
9.5		8.9	43.9		9.5		17.3	8.1		9.2		51.9	59.5		9.7	44	9.6	59.9		9.5	1	2.0	37.5	
9.7		29.2	11.0		9.0		22.4	21.5	Sj	9.8		53.2	54.8		8.8		43.3	9.0	K	9.5		11.6	32.0	
9.5		33.8	17.5		9.7		58.4	57.6		10	29	7.3	40.3		10		45.5	6.0		9.5		22.1	36.2	
8.3		46.2	57.0	K	9.8	14	14.8	22.1		10		8.6	5.8		9.5	45	2.9	36.2		8.5		24.7	19.1	K
9.4	57	13.5	45.0		8.5		44.1	56.0	K	8.8		14.4	30.6		8.4		23.0	0.8	Sj	8.9	2	5.0	8.0	K
7.8		14.5	47.2	K	9.4		55.0	55.4		9.5		46.9	33.7		9.8		37.1	59.2		10		9.6	5.5	
9.4		17.3	25.3		9.4	15	17.7	18.9		7.0		59.6	7.7	K	8.9		39.1	23.0	K	9.5		19.5	26.8	
8.5		48.7	22.0	K	9.3		33.3	6.2		9.4	30	35.2	51.2		9.6		43.6	27.4		8.7		25.2	41.3	K
9.4	58	9.4	30.2		9.7		39.2	19.6		8.3	31	3.5	41.2	K	8.0	46	16.4	46.0	Sj	10		35.5	14.2	
10		17.2	14.9		9.4		45.7	58.5		8.9		5.6	44.3	K	9.9		18.3	2.7		9.5		49.9	33.8	
8.5		24.2	54.8	K	10		50.0	14.7		10		24.1	34.9		9.6		20.6	27.1		9.3	3	10.4	57.0	
10		31.9	53.9		9.2		53.2	55.1		10		51.8	15.2		9.5	47	6.8	4.7		9.4		29.5	22.8	
9.4		32.0	46.2		9.0	16	11.6	44.7	Sj	10	32	1.1	34.4		9.5		9.8	26.8		10		31.9	32.4	
8.7		38.4	38.8	B	9.3		17.0	23.5		9.8		5.3	28.1		6.0		22.6	21.1	K	9.2		46.2	2.3	
9.1		59.1	42.4	B	9.8		43.8	7.2		9.1		18.5	57.6	M	9.3		24.2	58.0		9.3	4	6.3	53.0	
8.9	59	8.8	2.8		9.6		45.1	23.5		8.5		40.9	17.1	K	9.6		30.5	54.8		9.1		52.1	32.7	Sj
8.8		26.0	15.6	B	9.8	17	7.9	24.6		8.7		58.7	54.6	K	9.0		49.0	10.9	Sj	10	5	16.7	28.1	
8.5	1	32.8	43.7	K	9.7		22.1	24.8		8.3	33	20.2	56.0	K	9.5	48	15.9	37.4		10		23.7	55.7	
8.2	2	4.1	0.1	K	10	18	6.9	35.3		8.9		45.9	35.4		10		17.4	30.2		8.2		36.8	59.4	K
9.5		36.7	28.9		9.0		27.9	47.1	Sj	5.3	34	0.1	57.9	K	10		37.0	37.8		7.0		38.7	45.8	K
9.0		46.3	49.7		9.6		36.7	30.1		10		24.9	19.2		9.3		51.5	13.8		9.5		53.8	38.1	
9.5	3	0.5	19.5		10	19	28.5	47.2		10		44.1	35.8		8.8		54.4	51.0	M	10	6	0.9	43.4	
9.5		44.2	38.4		9.6		41.4	58.9		9.3	35	13.5	58.5		9.7	49	8.9	56.1		10		3.1	51.4	
8.9		46.7	20.8		9.0		53.2	53.0		9.0		28.8	16.8		9.4		16.3	20.2		9.5		22.8	50.6	
9.0		49.7	2.0	B	9.4	20	7.1	7.1		9.5		42.8	17.0		9.9	50	5.4	4.3		8.5		28.3	50.6	K
9.0	4	33.1	22.7	K	9.8		19.2	4.7		9.5		52.1	35.3		9.5		30.8	27.4		9.3		40.2	8.8	

3544: neb GC 3397

3801—3860				3861—3920				3921—3980				3981—4040				4041—4100			
14h		–7°		14h		–7°		14h–15h		–7°		15h		–7°		15h		–7°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.4	6 42.8	57.7	M	9.5	24 34.9	47.6		7.5	46 44.5	47.7	K	9.0	6 2.5	59.8	K	9.5	23 35.8	19.8	
9.7	7 32.3	1.8		9.1	35.1	23.9		8.6	47 4.0	33.1	K	8.6	18.4	30.7	Sj	9.3	48.1	16.3	
9.8	32.9	16.7		8.6	41.0	49.5	K	9.4	14.8	48.0		9.4	30.8	59.8		9.4	59.1	5.2	
9.8	46.7	5.5		9.7	42.0	2.4		9.5	22.6	17.9		9.5	45.5	22.1		8.7	24 9.2	56.5	M
9.0	8 8.5	41.1	M	9.6	47.9	16.7		9.1	24.7	8.3		8.5	48.4	40.2	K	10	52.0	39.5	
9.6	43.3	45.7		9.4	25 38.5	49.8		8.8	31.4	31.7	K	9.8	7 25.9	22.8		9.5	25 11.6	54.6	
9.3	9 16.6	2.4		9.5	26 22.8	9.1		9.5	48 14.6	5.1		9.2	40.7	17.4	K	8.0	19.4	35.1	Sj
9.5	31.1	43.2		9.9	49.5	10.0		9.2	24.2	24.8	M	10	58.9	32.0		9.8	42.0	34.1	
9.5	39.7	30.5		10	51.8	7.0		9.8	49 22.6	3.1		9.9	8 0.3	35.3		9.2	52.4	33.9	
9.3	50.9	31.0		9.5	27 19.7	46.0		9.3	50 11.7	38.0		9.5	42.3	52.3		9.4	57.1	41.9	
9.0	10 9.6	43.5	M	9.1	43.6	43.6	M	8.6	39.1	58.5	K	9.4	47.4	40.2		10	26 23.9	27.4	
9.3	10.1	28.4		9.2	53.8	25.6		9.8	51 0.5	12.3		7.5	9 8.3	44.1	Sj	9.2	29.8	57.6	
7.2	19.2	17.3	L	8.8	28 3.1	4.7	K	9.1	17.2	42.3		9.1	21.7	20.9		9.5	37.0	33.4	
10	35.6	19.2		7.0	4.8	56.2	K	9.7	52 6.4	24.8		7.5	28.7	19.2	K	8.0	56.5	37.5	K
9.6	46.3	24.3		9.4	27.8	51.4		9.5	33.3	52.6		9.7	34.2	36.7		8.2	27 11.9	38.0	K
10	57.2	58.5		8.7	55.1	46.3	K	9.3	47.7	19.8		9.8	57.3	42.3		7.7	28 18.4	8.7	K
10	11 25.1	14.7		9.1	29 30.6	43.8	K	9.7	53 2.7	20.1		9.8	10 14.8	29.4		9.8	28.0	43.6	
8.6	40.0	10.7	K	10	30 24.2	55.0		var	13.5	56.4	K	9.5	19.7	19.0		9.0	29.5	14.0	K
10	42.1	50.2		9.1	30.1	41.0	M	9.5	43.1	52.6		7.3	48.8	51.9	B	8.5	36.8	24.6	Sj
9.4	46.2	46.5		9.7	31 6.1	0.2		9.0	53.6	52.8	K	9.3	50.7	33.4		10	51.9	11.2	
9.8	57.1	12.3		9.3	32 21.3	20.6	K	9.8	59.8	2.0		8.5	11 14.2	22.5	M	9.8	29 5.4	51.5	
8.4	12 22.0	25.3	K	9.5	44.6	1.3		10	54 6.2	31.5		10	40.3	29.8		8.2	10.0	17.8	K
9.8	13 29.1	0.9		9.4	55.4	32.6		7.0	19.5	45.9	Sj	9.8	52.7	11.3		9.5	10.4	39.6	
10	44.6	27.3		8.8	33 8.2	16.6	K	6.5	26.1	0.0	K	9.2	12 45.2	33.0	M	9.0	12.4	42.3	
9.5	52.7	31.4		9.8	24.0	6.9		9.7	33.8	3.4		9.2	13 35.6	14.4	M	9.0	41.8	5.9	M
10	59.5	35.3		9.8	25.5	2.2		7.1	46.8	15.6	K	9.8	14 0.3	43.7		10	30 8.4	37.8	
9.6	14 5.5	24.0		9.5	41.6	20.3	h?	9.8	56 3.5	44.8		9.0	21.8	43.6	Sj	10	8.8	45.7	
10	7.6	55.8		8.8	42.4	2.2	K	9.8	17.0	27.8		9.4	35.5	31.2		9.7	16.4	32.7	
9.4	11.5	6.2		9.3	34 5.0	35.8	M	9.6	24.3	59.0		9.3	37.2	17.4		8.0	19.5	11.8	Sj
10	11.5	28.6		9.7	15.1	56.3		10	28.6	12.3		9.8	51.6	40.7		9.8	29.3	22.9	
7.3	21.3	25.4	K	9.6	21.1	36.9		9.0	34.5	42.0	K	9.3	15 0.0	16.3		9.7	49.3	17.1	
10	47.5	15.2		9.5	35 3.0	0.0		9.5	41.5	44.1		9.0	9.0	54.8	M	9.8	31 28.3	23.0	
9.2	55.6	2.7		9.8	14.9	37.2		7.7	44.4	28.7	M	9.3	36.8	21.6		9.3	49.4	44.8	
7.0	58.5	6.1	K	9.2	19.7	45.7	M	9.7	57 6.0	56.9		9.4	16 8.0	37.2	M	9.6	59.2	1.2	
9.1	15 1.4	34.9	K	9.5	36 3.9	41.8		9.0	6.2	27.7	Sj	8.7	28.2	58.1	Sj	10	32 24.1	56.4	
9.8	32.6	9.7		9.5	30.1	36.9		9.5	53.5	47.3		9.9	39.1	45.9		9.5	30.3	29.4	
9.4	33.8	27.6		6.5	32.6	38.2	K	9.0	58 50.0	41.6	K	9.6	39.5	35.0		9.8	33 53.4	51.4	
9.8	37.4	15.3		9.8	38.7	50.9		9.2	59 17.8	1.3		9.1	17 12.6	49.6	Sj	9.2	59.1	35.2	
9.8	47.1	18.4		9.4	37 37.2	8.4		9.9	37.8	40.3		9.3	17.0	36.3		9.9	34 18.8	25.6	
10	16 29.0	0.1		9.0	39.1	50.5	M	9.8	41.0	37.7		9.7	51.1	58.6		9.6	20.7	12.4	
9.5	17 15.3	30.5		9.4	43.8	55.9	M	9.5	56.4	11.7		9.7	18 7.6	59.8		9.6	24.9	24.8	
9.5	56.0	45.6		9.5	38 29.0	45.2		9.3	59.3	19.7		9.2	38.0	49.8	M	8.3	27.7	26.9	K
9.6	18 2.6	57.3		7.1	31.1	11.1	K	8.0	0 29.8	20.2	Sj	9.7	48.6	4.8		8.3	32.9	11.3	B
9.5	5.5	38.5		10	35.0	6.5		9.8	30.9	38.3		9.1	19 12.9	39.3	Sj	9.0	37.4	29.0	K
9.7	6.5	23.7		9.3	39 3.9	32.6		9.0	1 31.5	41.7	K	9.3	16.6	6.8		9.5	52.0	22.1	
9.6	19 8.5	7.4		9.0	40 24.9	14.2	K	9.5	37.6	4.8		9.1	16.7	30.7		9.5	35 15.5	0.4	Sj
10	22.6	33.6		9.9	41 27.6	1.2		9.5	50.4	21.3		9.6	30.9	26.9		9.6	16.3	26.7	
9.6	25.1	3.2		9.0	32.9	46.2	K	8.6	52.0	18.8	K	9.1	32.5	38.2	Sj	9.0	34.9	40.8	Sj
9.5	32.7	40.7		6.8	41.5	53.7	K	9.5	54.2	41.2		9.5	52.5	47.3		9.8	55.0	6.7	
9.6	32.8	36.7		9.5	42 27.7	56.6		10	2 12.7	20.6		8.0	20 22.7	30.7	Sj	9.5	56.6	24.2	
8.7	20 39.4	10.0	M	9.0	32.8	15.8	K	9.2	13.7	24.7	K	9.8	40.0	44.0		10	36 25.8	11.3	
9.5	57.3	31.8		8.0	59.8	37.4	Sj	9.0	30.1	28.5	K	10	50.0	33.2		9.1	44.9	35.7	
9.2	21 24.3	12.3		9.4	43 15.8	32.7		9.4	4 5.4	18.3		10	21 23.9	29.0		10	37 6.4	48.6	
8.7	27.2	11.2	K	9.4	44 34.9	45.4		8.5	15.3	29.2	K	8.7	25.7	14.6	M	8.9	25.0	21.3	K
9.5	40.9	42.4		9.6	45.8	50.7		9.5	30.8	58.7		10	52.5	56.6		9.3	58.5	8.1	
9.0	23 15.4	59.5		9.2	57.2	41.8		9.5	41.9	47.7		9.4	22 23.6	8.5		9.3	38 14.7	56.4	
9.9	23.5	33.7		8.3	45 7.8	41.6	M	9.6	56.4	50.3		8.5	28.6	33.0	Sj	8.7	42.3	45.1	Sj
10	25.5	34.6		9.8	40.6	16.3		9.0	59.1	33.7	K	9.9	35.4	42.9		9.4	52.1	58.2	
9.8	54.3	42.8		9.8	46 3.0	7.2		9.2	5 23.5	20.0		9.1	23 5.4	15.5	M	9.8	39 9.6	1.5	
9.5	24 5.2	31.6		9.8	38.5	50.3		9.1	42.9	27.4		10	33.2	49.8		9.0	17.0	0.8	K

3963: 29:77 20′12″6 B_5, Ep. 1872.43

M.H. 448

4101—4160				4161—4220				4221—4280				4281—4340				4341—4400			
	15h	—7°			15h—16h	—7°			16h	—7°			16h	—7°			16h—17h	—7°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
7·7	39 26.5	59.9	K	9.1	52 42.8	44.4		9.7	3 23.5	20.9		8.7	17 3.5	17.2	Sj	9.6	32 42.4	44.6	
10	41.7	9.5		5.4	58.0	59.6	K	9.1	25.9	3.8	M	8.8	23.0	38.0	Sj	9.2	52.9	7.3	M
9.0	56.9	25.8	M	10	53 0.6	13.6		9.5	44.7	43.4		9.0	18 16.3	1.0		9.7	33 10.2	47.2	
9.9	40 13.4	55.0		10	1.5	42.6		9.8	48.1	22.4		8.5	22.0	52.0	K	9.4	46.8	10.5	
9.3	39.6	14.6		9.9	36.0	0.2		10	4 9.0	10.2		9.8	25.3	2.2		9.5	53.6	47.0	
9.6	43.3	13.1		9.8	54 2.2	2.9		9.4	20.6	6.4		8.6	46.1	31.1	Sj	9.1	58.7	37.3	K
9.5	54.1	58.3		10	24.7	36.4		10	20.6	31.5		9.6	54.1	14.0		8.0	35 42.1	50.5	Sj
8.9	54.2	14.9	K	10	40.5	0.6		9.5	5 13.1	18.8		9.5	19 17.0	46.2		9.5	38 4.7	24.0	
9.7	56.1	16.9		9.3	51.7	58.9		9.4	24.8	17.6		9.5	50.5	40.5		9.5	10.3	58.6	
9.3	41 7.8	31.6	M	9.5	54.9	2.5		9.0	26.9	0.0	M	9.4	50.8	56.0	K	9.4	39 6.8	55.3	
9.3	13.3	29.2		9.5	55 0.1	46.1		9.3	44.5	14.9		9.8	52.7	34.4		9.0	13.1	33.8	Sj
9.1	44.8	45.2	M	9.8	8.6	29.3		9.5	52.0	10.6		6.1	54.6	15.4	Sj	9.8	49.4	53.3	
9.5	42 1.1	32.3		9.8	9.7	31.4		7.0	56.1	44.6	Sj	9.5	56.0	34.2		9.7	52.9	9.9	
9.3	17.7	27.2		7.5	10.7	38.3	K	9.0	58.4	16.2		9.3	59.5	25.5		9.1	40 27.1	28.8	
9.4	27.3	23.2		9.8	15.2	34.2		10	6 8.1	52.0		9.8	20 2.1	2.9		9.5	56.1	43.8	
9.8	48.7	30.6		9.4	16.3	43.7		9.5	19.8	8.8		9.9	18.2	10.9		9.5	41 13.9	1.0	
9.5	43 0.8	39.2		9.8	36.1	54.4		10	30.3	12.3		9.5	29.0	50.3		9.5	23.6	50.4	
7·3	44 1.3	35.9	K	9.8	44.2	46.8		10	35.6	28.8		9.4	44.1	33.3		9.6	46.9	4.3	
8.4	4.7	57.1	K	9.8	48.1	24.3		9.6	38.2	47.3		7.2	59.0	47.8	Sj	9.4	42 6.2	28.0	
9.5	6.0	6.0		10	59.6	30.3		10	54.1	45.1		9.8	21 3.5	28.6		9.5	30.7	14.3	
9.4	8.0	3.8		9.5	56 42.2	38.5		9.6	7 8.9	4.7		9.5	11.0	40.2		8.5	34.0	12.3	Sj
9.1	27.9	3.4	K	9.1	57 15.9	0.7		5.9	44.5	58.9	Sj	9.5	51.5	46.2		9.4	44 0.5	57.7	
9.0	35.3	47.1		9.8	20.9	12.4		9.5	48.4	3.0		9.8	22 18.1	33.7		9.3	5.1	51.0	
9.3	46.2	24.8		9.0	25.7	59.5	M	9.4	53.3	7.0		9.8	24.5	44.0		8.8	21.7	3.2	K
9.7	45 8.1	59.7		9.8	58 3.5	7.2		10	8 1.9	18.6		7.0	41.5	11.5	Sj	9.7	45.7	53.1	
10	10.2	30.4		9.4	23.3	58.6		9.0	21.1	34.3	R	9.5	51.4	53.1		9.7	52.6	54.0	
9.5	15.8	46.9		10	29.6	15.7		9.8	43.6	29.3		8.9	23 10.8	51.4		9.4	53.8	57.7	
8.2	25.5	12.9	K	9.5	37.0	26.2		9.6	47.6	28.0		8.1	17.3	13.2	K	9.3	45 35.2	4.6	
9.5	43.5	10.6		9.0	59 6.1	35.4	M	9.5	54.5	52.8		9.8	20.5	29.6		7.8	37.3	12.4	Sj
8.5	46.9	2.0	K	9.0	9.0	18.1		10	58.9	17.0		7.7	29.5	35.8	Sj	8.5	46 10.5	6.6	K
8.2	59.8	51.0	K	8.9	9.4	9.4	M	9.4	9 27.6	10.0		9.9	30.9	53.2		9.8	46.0	15.7	
8.9	46 26.7	32.9	K	9.8	17.4	4.7		9.3	34.6	46.1		10	47.5	36.3		10	47 14.9	57.9	
9.3	44.8	40.7		9.5	26.0	10.0		9.4	10 3.2	3.3		10	24 23.0	39.1		9.8	48 5.7	52.5	
9.2	51.1	2.6	M	8.7	28.8	18.1	M	8.8	6.4	2.3	K	9.6	36.1	3.8		10	47.0	21.7	
9.7	58.1	59.6		9.0	32.7	46.9	K	8.5	7.8	55.1	K	9.8	37.0	51.0		9.9	49 10.8	18.4	
9.5	47 4.7	42.0		9.5	36.9	1.6		10	8.6	8.0		9.8	38.6	10.7		9.5	36.8	40.1	
10	9.8	32.2		9.4	37.6	39.1		8.5	10.5	19.3	K	9.3	25 4.5	45.5		9.5	43.9	58.9	
9.4	48 5.0	51.4		7.8	54.8	34.0	K	8.7	11 17.4	31.3	K	9.2	16.5	29.7		9.6	50 44.2	14.7	
9.6	27.4	55.6		8.2	57.6	55.6	Sj	9.6	12 16.3	18.6		9.8	29.1	23.0		9.7	48.3	17.1	
9.5	43.2	11.1		9.5	0 7.2	43.2		10	43.6	34.7		10	38.1	2.2		9.3	51 8.7	33.1	M
9.5	49 5.5	2.2		9.6	10.1	23.7		9.3	45.2	45.2		9.8	55.1	8.4		9.3	17.7	3.1	
10	13.7	25.5		9.8	38.6	55.3		9.9	48.5	56.8		9.1	26 10.1	0.7	M	10	33.3	56.0	
9.5	40.1	26.1		9.8	1 5.5	24.3		9.2	49.5	44.7		9.6	20.0	27.1		8.0	41.2	43.8	K
9.5	41.6	27.2		9.4	9.9	37.6		10	58.6	43.3		7.8	43.9	50.2	Sj	10	47.3	23.1	
9.4	45.0	48.8		7·5	11.2	49.6	Sj	9.6	13 12.6	58.9		9.5	27 4.5	40.4		9.5	51.2	3.2	
9.8	48.2	39.2		9.1	20.6	28.5	K	10	13.0	42.5		8.6	32.0	37.8	K	7.8	52 11.5	18.5	Sj
10	52.6	17.0		9.4	26.0	28.5		var	36.2	21.3	K	9.1	35.9	38.0	K	8.7	41.5	9.1	M
9.8	50 0.7	10.9		9.8	30.7	46.8		9.5	43.1	45.2		9.8	59.4	30.8		10	53 21.8	39.4	
8.7	34.2	15.1	Sj	9.8	31.4	59.9		9.9	14 16.5	38.7		9.8	28 8.4	53.9		9.6	26.4	9.3	
9.0	46.7	32.6	K	9.5	35.4	4.1		10	17.1	44.7		10	49.2	13.4		9.4	47.8	30.8	
9.9	49.9	19.0		9.7	37.4	1.9		9.4	19.6	35.3		8.9	29 2.5	27.4		9.7	54 20.3	19.0	
9.8	51 0.7	55.5		9.5	51.4	0.3		9.2	24.1	16.9		10	50.4	36.8		7.3	56 40.3	29.9	K
10	27.1	52.5		9.8	58.1	38.5		9.8	47.0	58.7		9.8	55.6	15.7		9.4	57 13.3	42.9	
9.8	47.6	12.3		9.4	2 5.8	20.3		8.9	15 2.3	1.7		9.3	30 16.5	20.4		9.5	58 16.3	49.1	
9.3	52 0.7	0.6		8.6	10.2	52.3	Sj	8.9	10.6	23.1	M	9.7	24.7	56.8		9.6	51.3	21.9	
9.4	2.3	50.0		9.8	38.5	11.3		9.0	16 5.1	34.2	M	9.8	31 3.0	21.3		9.1	54.3	37.5	
8.7	5.1	28.4	K	9.2	48.7	51.8	K	9.4	31.0	31.8		7.8	46.6	13.1	Sj	9.5	59 21.8	46.9	
8.5	34.3	47.2	M	7·7	58.6	55.1	Sj	9.9	56.3	5.0		9.8	50.7	56.3		9.5	35.3	14.8	
8.0	35.3	23.9	K	9.4	3 14.6	50.5		9.5	58.2	55.3		9.8	32 8.4	30.0		9.2	44.7	56.3	
9.2	38.2	15.1		9.4	15.4	50.7		9.5	17 2.1	19.6		8.8	40.8	52.8	K	8.3	0 49.8	26.5	Sj

4292: roth

4401—4460					4461—4520					4521—4580					4581—4640					4641—4700				
	17h		—7°			17h		—7°			17h—18h		—7°			18h		—7°			18h		—7°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.7	1	22.5	17.0		8.8	27	2.1	9.0	Sj	9.5	46	36.9	12.7		9.5	9	29.6	3.2		9.8	30	35.6	17.3	
9.0		22.8	36.5	Sj	9.1		9.9	5.4	M	9.7		39.1	14.3		8.0		31.6	20.0	Sj	9.0	31	11.6	58.9	K
9.8		47.3	29.0		10		35.0	55.4		7.0	47	5.9	42.1	K	9.5		48.5	29.9		9.5		11.8	50.7	
9.7	2	38.4	42.0		9.8		37.6	58.2		8.7		18.9	26.5	K	9.5	10	12.1	7.5		9.0		45.7	24.5	Sj
9.8	3	50.8	27.4		9.4	28	5.0	56.9		9.1		25.6	58.7		9.4		33.0	6.4		9.0		49.5	28.8	
9.5	5	26.7	11.8		9.1		59.2	11.1		9.8		33.4	57.1		10	12	55.1	6.5		9.6		52.1	12.4	
10		26.8	23.7		9.2	29	2.8	36.5		9.4		39.4	30.8		10		59.1	9.9		9.6	32	7.6	40.6	
9.0		53.8	23.6	M	7.3		30.7	56.6	Sj	9.5	48	14.3	0.3		9.9	14	15.8	24.3		6.1		9.2	54.8	K
9.4	6	5.6	56.1		10	30	0.7	59.4		9.4		21.0	26.2		7.0		20.0	33.4	Sj	9.1		13.5	17.2	
8.8		34.8	13.6	M	9.8		12.4	59.7		9.7		21.9	19.4		9.2		38.6	0.1	K	9.1		19.6	22.3	Sj
8.9	7	4.3	51.0		9.1		14.7	11.8		9.1		23.5	21.8	M	9.5		50.1	12.3		9.9		35.8	2.9	
9.4		11.4	53.2		9.3		46.9	57.0		9.4		32.7	1.2	M	9.0		51.2	43.9	K	9.9		38.6	48.9	
8.0		27.7	1.9	Sj	9.4	31	1.6	39.1		8.9		59.6	41.9	K	9.4	16	5.5	29.4		9.7		46.3	23.1	
8.0	8	12.8	52.0	K	9.4		2.7	39.1		8.6	49	17.4	15.1	M	9.2		10.3	14.6		9.8		57.8	11.9	
9.0		25.7	5.9	K	9.5	32	12.0	42.3		10		46.8	5.8		9.8		30.1	5.0		9.5	33	1.6	34.9	
9.4		26.7	4.8		9.3		14.3	1.2		9.5	50	44.9	34.4		8.9		38.0	32.3		9.6		7.1	57.8	
9.5		46.2	4.8		9.3		37.6	0.5		9.1	51	27.9	25.5		9.8		41.3	9.2		10		22.5	2.9	
9.4	9	8.6	3.5		9.4		52.2	41.6		8.9		53.2	13.7		6.0		51.0	8.4	K	9.8		26.6	32.3	
7.7		31.7	42.3	K	10	33	12.2	29.8		9.8	52	3.7	6.7		9.6	17	10.2	5.4		9.0		48.9	10.9	K
9.3	10	7.7	30.2		9.5		26.8	32.7		9.0		5.3	29.8		9.0		26.8	52.4	Sj	9.4		50.3	58.7	K
9.7		11.2	13.6		9.5		46.7	21.4		8.6		31.8	56.0	M	9.7		33.1	34.3		8.7		52.1	24.3	M
9.4		27.1	13.2		9.5		52.0	48.6		9.4		33.7	57.2		7.9	18	22.3	41.5		9.4		54.1	25.4	
9.5		56.1	3.8		8.8		54.2	35.4	K	8.7		44.9	31.0	K	8.4		40.2	12.5	L	9.5		54.4	53.8	
9.5	11	27.7	25.4		9.5	34	10.7	29.3		9.0		57.4	33.1	K	9.5	19	13.5	0.8		7.3	34	27.7	28.3	M
9.8		33.0	54.4		8.5		22.5	59.6	K	9.8	53	22.1	56.8		9.9	20	2.6	38.2		9.6		28.6	0.3	
9.4	12	3.4	53.2		9.3	35	22.2	26.5		8.8		35.2	33.6	M	10		8.7	38.6		9.5		31.9	11.6	
7.8		8.3	51.5	Sj	6.7		56.9	0.4	Sj	9.6		39.7	9.3		9.4		54.2	49.4		9.0		34.6	23.1	Sj
9.5		24.9	18.6		8.3	36	7.9	57.4	K	9.2	54	38.9	18.8		9.5		58.5	28.4		8.5		44.1	06.5	M
9.0		27.1	21.1		9.4		33.5	5.2		9.5	55	4.2	44.3		9.0	22	0.5	22.7	Sj	9.0		44.9	27.5	
9.8		53.6	58.8		9.6		34.1	47.6	WC	7.8		14.8	39.9	M	9.3		4.3	45.0		6.2		47.0	42.3	K
9.5	13	33.5	59.0		9.8		41.8	42.4		9.5		18.2	18.4		9.5		54.5	21.8		9.7		51.9	6.7	
9.5		37.6	37.7		8.5		42.8	47.7	K	10		40.1	6.3		9.8	23	20.8	48.5		9.0		52.1	49.8	
9.5	14	40.6	41.7		8.0		44.7	20.2	K	9.7		40.5	53.1		9.5		21.1	15.4		9.0		54.4	5.5	K
9.1	15	5.7	40.7	M	9.5		48.8	44.3		8.8		50.9	40.4	M	9.5		41.9	8.1		9.8	35	7.1	26.1	
9.4		51.6	0.4		9.1	37	35.3	10.0		8.9		59.9	56.1		9.5	24	14.7	46.4		8.5		16.2	51.0	M
9.6	16	1.1	6.6		9.5	38	3.8	9.6		10	56	57.1	34.5		9.6		19.8	25.0		9.5		20.8	37.3	
9.8		12.6	0.5		7.0		39.1	55.1	Sj	9.5	57	32.0	2.3		7.9		21.0	55.6	Sj	8.6		21.2	7.1	K
8.8		26.7	57.0	M	9.2		45.9	57.6	M	9.8		41.2	8.7		9.5		37.6	25.9		9.5		21.5	6.8	
9.7	17	8.2	17.1		9.5		58.0	26.8		9.9	58	45.3	12.0		10	25	2.1	8.2		9.3		41.6	51.8	
9.4		16.2	24.7		9.3	39	13.5	53.6		9.5		47.0	37.8		9.5		6.2	40.4		9.5		42.3	13.7	
9.5		43.7	25.8		9.7		13.6	19.6		9.2	59	30.4	24.8	M	9.7		27.9	10.2		9.4		48.3	2.0	M
9.4	18	4.8	37.0		9.2		15.1	31.4		9.5		40.4	20.7	M	9.6		48.0	22.0		9.7		52.0	36.5	
9.0		7.7	37.6		9.7		50.1	13.6		9.2	0	16.0	59.8		7.5	26	21.2	48.7	M	8.5		52.7	52.2	K
8.0	19	23.6	11.1	Sj	9.7	40	22.8	2.3		7.2		18.8	8.2	K	9.0		53.1	40.3		9.5	36	8.8	3.5	
9.6	20	23.7	37.1		9.8		30.9	20.6		9.5	1	13.6	1.1		9.5		56.3	7.4		9.7		21.3	7.1	
9.8		35.3	15.7		9.8	41	6.2	26.7		9.0		14.8	22.2	M	9.5	27	7.8	1.6		9.4		31.1	0.8	
9.5	21	25.2	21.0		9.8		21.9	15.6		9.2		18.1	55.5		9.0		19.9	31.6		8.6		36.9	45.7	Sj
7.8		51.1	53.6	Sj	8.0		35.4	44.1	Sj	8.7	2	0.4	55.9		9.1		31.2	15.4		9.0		43.4	43.2	K
9.3	22	4.9	5.4		9.6	42	24.0	50.6		9.5		29.8	22.8		9.7		48.5	20.3		8.2		44.6	14.8	L
9.9		44.8	20.0		8.5		39.6	13.9	M	9.3	3	0.6	10.8		9.4	28	7.3	51.4		9.6		52.5	44.3	
9.0		51.7	44.9		9.3	43	51.4	28.2		7.1	4	34.0	19.2	K	9.5		41.2	48.3		9.5		59.8	52.5	
8.0	23	8.2	49.9	K	9.6	44	9.9	15.6		9.8		53.5	21.2		10	29	1.1	4.8		9.1	37	7.0	42.9	K
9.4		34.0	23.7		8.9		27.0	32.3		9.0	5	15.5	48.5	K	9.0		13.2	43.0	M	10		7.3	18.1	
9.7	24	0.5	9.3		9.2		41.4	30.4		9.5		36.6	11.4		9.5		13.6	54.2		9.0		24.3	6.7	Sj
9.4	25	20.7	30.8		8.7		51.6	54.4	M	9.0		48.6	37.7	K	9.4		29.3	46.8		9.3		32.3	7.3	
8.8		46.4	22.9		9.4	45	2.9	48.5		9.2	6	13.2	55.4		7.8		51.0	27.2	K	9.1		47.2	43.5	K
8.0		55.2	48.6	K	7.5		7.4	52.3	K	9.8		19.8	26.1		9.8	30	4.6	13.1		10	38	2.2	15.8	
9.3	26	5.7	25.7		9.4		28.9	58.4		9.4	7	52.6	56.8		8.8		7.2	46.2	Sj	9.4		8.5	10.8	
9.3		51.2	50.6		9.8		56.3	12.1		9.4		52.7	15.2		9.1		27.9	5.6		9.3		22.2	41.2	
9.2		56.0	10.5		9.8	46	13.9	40.0		8.1	9	19.9	15.8	K	9.0		33.0	24.5	K	7.4	39	3.8	43.7	K

4556: neb GC 4370 4648: roth

4701—4760				4761—4820				4821—4880				4881—4940				4941—5000			
	18h		−7°		18h		−7°		18h—19h		−7°		19h		−7°		19h		−7°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
10	39	5.9	34.8	8.8	46	22.5	30.2	Sj	9.2	53	40.8	12.4	M	9.6	3	46.5	43.3		8.3	15	11.5	13.9	K
10		6.1	9.4	10		32.7	39.3		9.5	54	4.0	37.0		9.7	4	7.4	7.0	M	7.0		14.9	40.1	B
9.5		9.0	6.3	8.9		33.4	46.2	M	9.3		7.2	43.7		9.8		17.3	24.2		9.8		15.7	49.9	
9.6		11.2	6.0	9.6	47	25.8	10.5		9.8		7.2	14.7		9.8		20.7	26.4		9.0		16.6	29.5	M
9.9		31.7	35.5	9.2		31.5	22.3		9.2		10.5	41.3		10		26.6	13.8		9.1		17.8	9.2	M
9.3		32.0	59.7	9.0		41.8	13.1	K	9.6		22.6	14.2		9.3		31.1	6.9	M	9.7		31.3	55.6	
9.7		38.2	58.5	9.1		48.7	8.6		9.3		50.7	39.3	M	9.0		34.9	42.3	K	7.8	16	14.8	15.2	B
9.8		41.9	42.6	9.3		50.2	43.1		9.8		51.9	12.6		8.5		59.9	43.7	K	9.5		18.9	44.5	
9.5		46.7	5.7	9.3		51.8	43.5		7.5		57.5	55.8	L	9.1	5	19.2	59.3		9.3		35.1	20.0	M
8.9		51.4	3.5	Sj	9.7		57.7	25.5		9.2	55	1.8	30.6	M	9.0		22.0	2.8	M	8.8		40.4	55.8	K
10		52.3	9.1		9.8	48	4.6	58.6		9.2		7.3	13.1		9.4		27.7	23.2		9.8	17	14.8	48.8	
9.3		55.3	11.7		9.3		9.1	21.4		9.0		14.2	33.0	K	9.8		39.3	34.5		9.8		33.8	1.9	
8.9		59.0	11.8	K	9.4		9.4	12.5	M	8.5		39.3	34.2	K	9.5		56.8	44.1		9.0		41.2	12.5	Sj
9.8	40	13.9	14.1		9.8		9.5	58.8		9.8		49.7	14.3		9.1	6	41.4	24.0		9.3	18	3.2	6.1	
9.7		17.7	56.5		9.9		17.3	4.1		9.4		59.3	36.1		9.5		48.9	26.5		9.5		9.9	29.0	
9.8		20.0	2.4		10		23.0	8.1		9.4	56	0.4	36.1		9.7	7	19.0	15.5		8.5		19.4	16.8	K
9.3		25.1	35.3	Sj	9.7		25.0	31.8		9.2		19.5	8.0		9.5		30.3	50.7		9.5	19	10.9	39.0	
10		31.7	5.1		9.7		41.2	34.3		9.1		20.8	52.0	R	8.9		32.3	56.2	M	9.5		11.9	28.4	
9.6		40.2	43.1		9.4		49.9	46.2		8.0		33.6	55.4	M	9.5		36.4	51.0		9.0		35.7	41.0	K
9.5		40.4	20.6		8.3	49	0.4	7.5	M	10		35.4	11.8		9.5		53.1	48.6		9.1		36.4	26.9	M
8.7		45.3	17.2	K	9.6		5.8	56.7		9.4		43.9	14.7		10		54.1	47.6		9.0		54.4	53.4	Sj
9.5	41	7.2	50.0		9.8		14.7	33.7		9.1		56.3	39.6	M	9.0	8	8.8	15.8	Sj	9.8	20	11.3	14.5	
9.3		14.6	7.4	K	9.6		19.4	59.6		9.6	57	9.5	22.1		9.5		8.9	45.2		9.5		26.4	19.1	M
9.8		16.4	39.1		9.3		21.9	26.6		8.2		11.2	21.5	K	9.7		10.4	23.0		9.8		46.6	9.6	
9.6		35.2	2.7		9.4		26.5	34.4		9.0		11.4	13.4	Sj	9.2		31.3	9.4	M	9.1	21	11.9	33.3	K
8.0		42.5	43.6	M	9.5		32.0	3.4		9.2		28.7	45.2	M	9.0		32.5	5.8	Sj	9.5		16.3	5.2	
9.6		47.6	6.5		9.8		46.8	58.4		9.7		31.7	57.6		9.5		36.4	47.7		9.2		18.4	28.8	M
9.3		53.3	37.0		9.5		58.7	59.5		9.8		35.8	42.7		9.9		41.5	17.8		6.8		32.6	20.1	B
8.9	42	3.7	37.7	M	9.5	50	0.8	51.7	M	9.0		38.5	0.7		9.0	9	9.8	28.0	M	9.3	22	17.9	53.1	M
9.3		5.2	49.2		9.8		4.9	13.8		9.5	58	20.9	57.0		9.4		20.0	56.9		9.2		31.4	18.7	M
10		20.1	13.6		9.5		14.7	46.3		9.6		22.5	59.0		9.3		33.5	6.4		9.3		40.0	34.4	M
9.5		23.7	44.9		9.5		31.9	2.9		9.2		44.9	9.2		8.9		41.0	7.3	K	9.5		48.9	28.2	
8.8		31.7	25.7	K	9.5		59.9	5.3		9.2	59	2.6	59.9	M	9.5		55.4	14.3		9.4	23	2.5	24.0	
9.7		33.0	0.2		8.9	51	3.0	32.3	M	10		19.9	2.9		9.3		59.3	18.8		9.0		10.4	28.7	M
8.8		35.9	2.1	K	9.4		11.8	51.4		9.3		26.8	17.2		9.2	10	1.1	19.9	M	9.1		14.0	39.6	M
8.5		39.7	10.4	K	9.4		17.6	46.8		8.3		49.0	37.2	Sj	9.1		22.9	26.1	M	10		41.8	10.5	
9.0		41.7	28.2	K	9.9		22.6	15.4		8.9		54.3	33.4	M	9.0		31.8	13.4	M	9.0		46.3	6.3	
10		48.3	51.3		7.7		24.6	2.1	M	9.3	0	6.4	4.1	M	9.2		38.4	19.3	M	9.4		54.0	17.3	M
8.3		49.3	59.7	M	8.5		26.0	19.6	Sj	9.5		6.5	0.3		9.0		43.9	47.2	Sj	9.1	24	53.0	38.0	M
8.7	43	18.3	57.4	K	10		26.8	37.3		9.5		27.5	34.1		9.5		50.8	49.9		9.5		54.4	53.4	
9.3		32.7	17.4	Sj	10		32.6	19.6		8.0		30.8	39.5	Sj	9.5	11	11.7	14.5	M	9.4		56.3	8.4	M
9.5		43.2	34.7		9.8		34.3	22.5		9.0		42.7	49.8	M	9.5		18.0	14.8		9.5	25	9.9	10.7	
9.1		59.3	52.1		9.7		44.8	1.4		8.3		51.7	11.1	M	8.5		32.4	16.7	M	9.5		18.1	47.0	
8.9	44	12.0	43.0	K	9.5		51.6	35.1		8.5		58.8	41.7	K	8.3		38.3	27.5	M	9.0		34.0	25.7	K
9.1		16.7	45.7	K	9.4		55.7	20.4		8.2	1	1.3	50.6	B	9.5		56.1	0.1		9.8		36.4	4.8	
8.3		17.7	25.4	S	9.1		59.5	5.2	M	8.7		13.8	24.9	M	10	12	8.5	4.5		9.5		53.9	42.4	
8.3		19.3	9.3	K	9.5	52	3.3	58.8		7.8		14.0	14.1	K	9.8		17.9	37.5		9.5	26	5.7	39.5	
9.9		31.4	14.7		9.8		10.6	54.6		9.3		29.9	11.4		9.1		20.8	39.8	M	9.4		7.5	35.2	
9.3		31.6	19.6		7.4		40.0	34.7	K	8.2		36.5	8.5	K	8.5		46.8	0.8	K	9.0		12.8	57.8	M
9.0		47.7	40.8	K	9.8		44.2	38.8		9.1		42.7	11.5	M	9.0		51.5	11.7	Sj	9.0		30.5	29.2	K
9.5		59.7	57.5		10		46.6	32.6		9.5	2	11.4	24.5		9.5	13	37.4	38.8		8.5		42.9	5.7	Sj
9.6	45	7.8	6.3		8.3		58.4	44.1	B	7.3		12.8	30.4	K	9.5	14	0.9	51.2		9.5		46.0	20.8	
9.4		12.7	39.6	K	9.8		58.8	29.5		9.5		37.2	48.7		8.5		19.3	51.3	M	9.0		50.4	53.6	M
9.2		21.9	9.9		9.4	53	7.0	59.8		9.5	3	3.2	21.3		8.6		28.0	59.6	K	9.3	27	4.8	55.4	M
9.1		22.1	15.1	M	9.6		10.2	41.6		8.9		8.7	55.4		8.0		39.8	29.5	M	9.3		5.9	28.7	M
9.8		28.2	3.8		9.5		15.9	19.0		7.0		11.8	39.4	Sj	9.5		41.6	55.0		9.1		14.1	49.3	K
9.8		47.9	5.4		9.3		20.0	14.0		9.8		14.7	29.8		9.4		44.4	35.8		9.8		31.4	15.7	
10	46	6.9	14.3		9.2		25.7	42.5	M	9.0		18.2	8.1	M	8.7		52.6	24.1	S	7.0		41.0	46.0	Sj
9.0		19.2	42.4	M	9.5		26.3	13.9		9.2		18.4	15.7		9.8	15	4.4	24.0		9.5		42.9	19.3	
9.4		20.6	14.4		8.6		29.1	4.0	K	9.9		41.7	11.4		9.0		9.8	14.5		8.2		46.7	37.5	K

5001—5060					5061—5120					5121—5180					5181—5240					5241—5300				
	19h		—7°			19h		—7°			19h—20h		—7°			20h		—7°			20h		—7°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.2	27	55.9	5.7	K	8.0	39	53.6	41.9	K	9.8	50	24.0	22.5		9.2	0	41.3	47.6		9.8	9	59.7	3.9	
9.7	28	0.0	13.4		10	40	0.7	3.6		9.6		24.6	33.9		9.5		51.6	8.8		8.5	10	23.7	3.0	Sj
9.6		7.2	13.3		9.8		25.6	5.6		9.4		36.0	56.7		8.1		55.7	26.2	K	9.6		57.8	2.9	
9.5		45.5	30.1		9.3		39.2	5.8		9.8		53.4	12.0		9.4	1	10.2	26.0		9.0	11	5.3	20.0	K
9.5		48.1	56.2		9.3		46.9	3.9		9.7		53.4	14.2		9.4		36.2	36.3	M	9.3		7.7	11.1	
5.0	29	5.1	20.7	K	9.8		57.5	54.0		9.2		57.0	17.5	Sj	9.3		51.6	2.3		7.8		11.8	5.2	K
9.5		13.0	39.1		9.7	41	8.4	17.4		9.5	51	19.2	58.7		9.5		52.1	7.2		9.0		16.4	45.0	M
9.5		32.7	9.4		9.4		11.3	55.3		9.4		22.0	3.1	Sj	9.4	2	3.8	35.7	M	9.0		17.4	39.4	M
9.3		33.7	12.9		9.2		30.8	33.5		9.8		28.9	14.0		9.5		8.8	36.8		9.1		21.2	55.8	
9.5		49.6	6.7		9.3		35.8	48.9		9.4		48.7	37.7		9.4		17.4	23.5		9.0		26.3	24.2	K
9.0		54.2	23.2		9.1		36.9	54.8		9.8		57.5	24.6		9.7		25.3	51.1	M	9.4		34.7	50.6	M
9.5	30	13.8	41.0		8.7		49.4	9.8		9.8	52	6.1	58.5		9.8		42.2	22.8		9.3		51.2	8.4	
9.0		15.0	28.1	M	9.3		58.7	7.7		9.8		10.9	34.2		9.0	3	6.1	3.0	K	9.5		53.8	16.9	
9.5		17.9	6.7		9.5	42	20.1	54.1		9.4		25.6	28.2		9.8		13.8	41.9		9.8		55.6	31.4	
9.4		34.6	3.2		9.4		33.4	44.0		9.5		34.5	45.6		9.5		15.7	22.5		9.5		55.7	42.1	Sj
9.5		48.8	43.1		8.8		40.9	25.8	K	9.8		40.5	9.1		9.7		19.2	24.3		9.2	12	3.9	56.4	M
9.5	31	7.6	59.1		8.9		42.3	33.1	Sj	9.9		43.7	10.5		9.4		23.6	1.9		9.3		22.0	18.8	
8.7		8.3	43.7	Sj	9.4	43	0.6	36.7		9.5		58.6	0.4		8.3		35.8	38.5	Sj	9.0		27.9	51.4	M
9.4		22.9	25.6		9.1		5.5	12.1		9.7	53	1.7	37.5		9.1		48.0	13.2		9.3		45.2	19.8	
10		27.8	4.0		8.9		6.8	26.7	K	9.6		2.0	18.3		8.0		48.1	43.0	K	9.0	13	5.8	21.2	Sj
9.5		33.8	15.1		9.8		7.7	1.3		9.8		17.6	45.8		9.3		51.7	31.0		9.5		7.1	35.2	
9.1		36.2	33.2	K	9.5		14.4	54.1		9.9		18.4	40.4		9.0		55.2	23.4		9.4		7.5	17.0	
8.8		47.5	13.3	K	9.4		31.9	24.0	M	9.2		22.1	28.0	K	9.2	4	0.5	56.3	K	9.0		8.4	37.0	M
7.8		53.1	2.1	K	9.5		35.7	18.9		9.1		24.5	13.4	M	9.0		5.5	55.6	K	9.8		27.7	41.7	
9.1	32	16.3	28.5		9.4		42.8	42.8		9.8		54.9	15.4		9.0		17.7	22.7	M	9.4		40.9	1.1	
9.1		39.0	56.5	M	9.5	44	4.9	30.4		8.5		56.1	34.2	K	9.8		40.4	53.5		9.5		42.4	37.2	
9.5		40.8	22.0		9.6		11.3	25.5		9.5	54	5.8	28.5	K	8.0		53.8	58.8	K	9.1		42.5	1.8	Sj
7.0		54.8	50.4	K	9.1		42.4	10.0		9.7		14.7	38.5		8.5		55.0	36.1	M	8.7	14	0.8	34.5	M
8.8	33	1.7	58.0	K	9.3	45	5.4	45.0		9.1		25.2	46.4	K	9.7	5	4.3	32.7		8.2		9.7	1.8	K
8.9		2.8	45.0	K	9.1		22.9	27.7	Sj	9.4		28.6	24.3		9.8		6.3	38.6		9.4		25.9	33.0	
9.4		23.3	42.5		8.5		34.1	11.3	Sj	8.2		36.1	38.2	Sj	8.0		7.3	53.1	K	9.4		26.9	48.2	Sj
9.3		27.4	23.0	M	8.0		38.8	47.7	K	9.0		46.6	32.4	K	9.5		7.7	56.5		9.8		27.2	42.8	
9.5		38.3	26.9		9.5		51.4	43.9		9.4		54.0	12.4		9.8		16.0	15.1		9.5		29.3	34.6	
9.5		47.3	43.7		8.9	46	12.9	7.6	M	8.8	55	7.1	24.8	K	9.8		17.4	49.7		9.4		53.4	27.5	
9.8		49.8	11.1		9.4		16.8	52.0		8.9		17.7	38.0	K	9.8		24.9	50.8		9.8	15	17.3	8.7	
9.0	34	1.3	9.7	M	9.8		33.4	2.9		9.8		34.2	42.2		9.0		32.7	31.8	M	9.6		40.0	51.5	
9.1		20.7	57.3		9.8		47.1	37.5		9.7		57.7	32.1		9.5		49.6	6.8		9.6		47.9	32.5	
9.4		24.3	45.7		9.0	47	8.0	15.5		10	56	10.6	27.2		9.0		51.1	21.3		9.3		49.8	3.1	
9.8		42.4	0.3		8.0		8.9	25.9		6.7		12.2	52.1	K	9.5	6	1.1	7.1		9.5		53.2	13.7	
9.8		50.3	15.0		8.8		12.9	49.9		9.5		27.9	16.8		9.5		22.2	56.5		9.8	16	24.9	10.7	
9.5		59.0	46.3		8.7		16.7	18.8		9.4		44.2	18.8		9.0		27.3	26.8	Sj	9.0		36.4	14.1	M
9.1	35	15.0	19.2	M	6.3		32.5	6.4	K	9.5	57	11.4	11.9		9.8		34.7	23.1		8.7		58.9	14.9	K
9.5		42.9	17.2		8.9		54.8	5.4	Sj	9.5		11.9	36.0		9.5		40.3	42.5		9.0	17°	10.1	15.5	K
9.4		48.4	3.7		9.8	48	21.7	50.2		9.4		43.7	24.6		8.5		44.6	6.5	K	9.8		21.8	25.1	
9.4		52.8	20.0	M	9.7		32.3	59.7		9.8	58	7.8	40.1		9.4	7	0.7	23.6		9.5		36.9	29.3	
9.5	36	0.8	51.7		8.5		34.9	14.3	Sj	8.9		28.2	27.4	M	9.8		24.8	41.4		9.2	18	5.2	24.7	M
9.0		22.0	57.1		9.4		44.2	16.0		9.8		47.6	15.7		9.5		25.7	28.4		9.5		6.3	19.9	
9.1		32.8	55.7		9.0		52.6	31.7	M	9.2		52.9	22.3	M	8.4		29.4	52.8	K	9.6		8.0	23.3	
9.5		34.5	52.7		9.5		55.1	26.4		8.2		57.7	25.7	M	6.6		40.5	58.1	K	9.6		48.8	15.5	
9.0		37.6	36.5	M	9.1		56.5	59.6		9.4	59	10.8	52.7		9.8		48.2	34.0		9.0		51.9	28.6	R
8.8		43.6	26.1	M	9.5	49	6.1	31.0		9.8		21.2	26.7		9.7	8	15.4	49.3		9.7	19	3.0	16.1	
9.4	37	0.2	50.4		9.5		10.5	8.2		9.5		21.9	1.0		9.5		27.5	28.6		9.8		8.8	0.8	
9.1		1.1	55.7		9.2		22.7	54.2		9.4		27.7	43.1		9.8		39.2	5.2		9.5		21.9	58.8	
9.2		1.2	28.9		7.3		23.2	47.3	L	9.4		49.6	11.8	M	9.8		47.1	45.4		9.8		29.4	15.5	
8.6		28.4	55.4	M	6.7		38.5	4.8	K	8.8	0	15.8	39.0	K	8.5		48.4	52.3	M	9.4		30.9	25.1	M
7.2		39.4	21.6	L	9.0		50.1	0.1	K	9.2		17.3	38.7	K	10	9	4.1	34.0	Sj	9.3		43.9	45.5	
8.5	38	7.7	56.3	K	9.1	50	3.8	20.6	M	6.8		21.3	10.6	Sj	8.5		7.8	16.7	M	9.5		45.8	15.0	
8.9		13.4	12.9	M	9.8		9.4	17.0		8.7		35.7	31.5	K	9.7		10.8	12.3		9.5		47.8	0.2	
9.5	39	15.4	36.8		9.6		16.5	16.0		10		36.5	43.2		8.9		21.1	15.9	Sj	9.8		50.8	8.6	
8.0		20.3	53.3	Sj	9.8		19.2	10.6		9.1		39.3	50.0	M	9.0		43.3	24.2		9.7		58.9	19.7	

5050: 37°53 36′45″4 B_1, Ep. 1884.63

5301—5360				5361—5420				5421—5480				5481—5540				5541—5600			
	20h	−7°			20h	−7°			20h	−7°			20h—21h	−7°			21h	−7°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
7.8	20 6.3	8.9	K	9.4	31 23.2	51.8		9.4	44 0.5	45.9		9.1	57 11.5	19.7	M	9.7	12 18.9	2.1	
9.5	6.9	26.7		8.5	33.6	53.7	L	9.5	23.5	40.3		9.8	41.6	24.7		9.6	36.4	58.5	
8.5	23.3	57.2	K	9.6	46.1	26.5		9.2	25.0	54.9	M	9.3	42.4	34.6		9.0	13 13.0	24.5	K
9.0	21 1.8	1.5	M	9.1	32 28.4	15.6	Sj	9.2	25.9	30.2		9.0	58 0.4	52.1	K	9.6	40.0	29.9	
9.5	7.6	21.6		9.3	35.1	49.6	M	9.6	42.3	10.3		9.8	1.0	49.2		9.6	14 40.5	12.2	
8.9	16.3	59.0	K	9.7	42.4	12.0		9.1	57.3	20.9	K	9.0	31.8	16.1	K	9.3	41.4	28.2	R
8.5	19.4	29.6		9.3	43.8	20.6	M	9.4	58.6	5.2		9.4	40.5	58.9		9.6	15 7.2	56.1	
9.3	43.8	26.8		9.8	52.5	55.8		9.2	45 3.5	34.4	K	9.5	56.7	59.1	M	9.5	28.6	8.6	M
9.8	46.4	19.7		8.0	33 1.4	18.1	K	9.1	6.5	37.5	R	9.8	59 10.9	16.2		8.0	16 11.3	12.2	K
9.3	22 3.9	24.2	M	9.2	2.7	26.6		9.1	23.9	23.5		9.1	13.8	1.6	K	8.5	14.0	12.2	K
9.8	4.2	50.1		9.4	9.0	23.1		9.4	37.2	51.9		9.8	19.1	25.0		8.0	29.5	21.6	K
9.8	14.6	58.7		9.0	10.7	17.4	K	9.2	43.1	51.6	M	9.1	22.2	47.3	K	9.7	37.3	53.8	
9.8	25.8	45.9		8.5	18.7	21.7	K	6.5	46 14.9	25.8	L	9.2	34.2	45.5	K	7.3	55.2	19.9	K
9.4	33.3	57.3		9.2	28.5	23.9		9.4	42.0	34.6		9.8	39.9	9.4		9.8	17 17.1	5.2	
10	54.9	41.6		9.6	37.5	14.3		9.0	46.5	43.6	L	9.6	42.5	18.9		9.1	26.1	40.1	K
8.8	23 8.0	36.1	R	8.5	41.6	42.3	L	9.5	47 16.8	27.0		9.3	0 10.6	59.9		9.3	37.3	38.8	
9.6	27.6	10.4		9.3	43.7	13.7	Sj	7.8	19.5	43.0	Sj	9.5	19.5	14.6		9.6	18 12.7	8.8	
9.3	24 0.1	28.4		8.7	34 1.4	1.3	K	9.6	24.0	1.9		9.4	25.2	41.7		9.6	42.6	4.5	
9.8	3.2	34.9		9.5	16.5	32.6		9.4	30.4	24.5		9.3	51.5	22.4		9.5	19 4.6	25.8	
9.8	26.5	42.0		9.3	38.9	33.6		10	33.7	3.5		9.8	56.6	12.0		9.6	11.4	47.1	
8.8	36.4	56.4		9.4	56.5	28.1		9.2	58.3	15.0	M	7.8	1 2.7	34.2	K	8.6	18.7	36.3	K
9.2	44.1	52.7		9.8	35 40.0	11.7		9.2	48 5.0	40.0	R	9.4	36.0	58.1		9.5	21.8	32.9	
9.3	25 13.9	7.1	R	9.4	36 7.9	4.9		9.4	19.8	2.6		9.5	2 1.1	20.5		8.5	22.6	6.0	K
9.1	37.3	17.7	M	9.3	16.1	20.0		10	31.5	19.0		9.3	51.3	51.9		9.5	27.8	38.6	
9.5	47.3	49.5		9.5	20.6	28.1		8.3	42.1	49.0	K	9.5	54.7	30.9		7.5	42.2	38.5	K
9.7	26 6.0	14.7		9.0	35.7	52.9		9.3	44.5	25.6		9.5	3 2.1	57.2		9.8	57.6	4.8	
9.9	8.4	12.6		9.0	54.5	51.9		9.4	48.0	38.1		8.6	42.6	56.1	M	9.5	20 37.1	51.8	
9.0	16.4	59.9	M	9.4	37 15.6	25.5		8.0	55.5	30.5	K	9.8	4 5.1	15.1		9.8	44.5	1.3	
9.5	22.3	31.3		8.2	31.1	16.9	L	9.5	58.2	14.7		9.7	22.2	14.1		8.7	58.4	14.9	K
9.0	25.0	50.3	K	9.8	45.6	24.7		8.5	49 20.5	1.8	K	9.4	46.6	15.2		9.4	21 18.6	47.1	M
9.0	27 2.1	43.5	M	9.0	46.7	46.9		9.2	27.8	59.3		8.8	59.6	27.8	M	8.9	26.5	20.0	M
9.8	12.1	57.0		9.8	56.5	12.6		9.5	36.7	6.5		8.2	5 4.3	45.0	L	9.1	50.6	7.1	
9.5	20.4	25.6		10	38 5.1	5.1		9.1	52.1	12.3		9.4	11.2	36.5		9.5	22 16.0	23.1	
9.8	29.9	2.8		9.6	47.2	36.2		10	50 5.2	59.2		9.2	16.1	22.0	M	8.6	20.1	55.8	K
9.1	35.5	41.9	M	9.6	49.7	44.2		8.5	7.0	26.5	K	9.8	34.5	12.6		9.3	21.5	14.9	M
9.5	38.6	49.5		9.1	54.1	24.3		9.0	9.8	1.5		8.7	38.3	49.7	Sj	9.5	33.0	27.9	
9.8	40.9	1.9		9.4	56.7	17.1		9.5	42.1	50.9		8.9	39.8	17.2	Sj	9.6	23 36.1	32.7	
9.3	55.0	24.2		9.0	39 2.0	0.5	K	9.2	44.5	32.1	M	7.3	56.1	3.7	K	9.8	44.6	14.1	
9.9	57.1	44.8		9.8	18.7	29.2		9.2	52.6	46.0	Sj	9.5	6 17.7	24.7	M	9.0	24 0.4	28.4	Sj
9.9	59.0	25.4		9.4	30.6	27.7		7.8	51 23.4	27.7	K	9.3	26.9	53.1		10	15.0	14.6	
9.2	28 20.6	47.9		9.4	46.7	49.6		10	49.1	38.6		9.4	55.2	47.8		8.8	48.3	18.5	K
9.0	21.9	10.7	M	8.0	54.6	38.2	M	9.6	52 0.1	43.6		7.2	7 12.4	41.2	Sj	10	25 51.2	9.6	
9.5	27.2	44.8		9.4	40 0.2	15.9		9.4	12.4	54.9		9.8	16.3	1.9		9.7	52.1	19.2	
9.7	39.9	16.2		9.3	2.1	28.6		9.1	29.8	59.3	M	9.0	50.4	33.9	M	8.5	26 0.1	0.8	K
9.8	42.2	55.5		9.6	9.7	2.0		9.4	44.9	54.7		9.5	51.3	28.7		9.5	21.6	28.1	
9.5	29 10.4	9.9		9.8	16.1	21.8		9.5	50.0	31.5		9.5	8 34.8	21.6	M	9.5	47.7	43.4	
9.6	42.4	2.0		9.1	21.7	46.8	M	9.5	53.9	56.5		9.4	41.7	20.3	M	9.5	51.1	31.6	
9.6	49.0	10.8		8.7	25.5	19.8	K	9.8	53 0.2	54.6		9.5	9 13.6	55.4		9.8	27 14.6	15.4	
8.7	50.9	16.1	L	9.8	25.6	22.5		9.2	8.8	56.1	M	9.0	56.4	16.6		9.8	33.7	44.6	
9.5	56.9	38.6		8.5	43.3	19.7	K	10	29.6	20.0		9.5	10 32.4	12.2		9.3	28 11.6	5.9	K
9.3	30 3.7	50.4		9.0	41 16.3	16.3	K	9.5	41.1	39.6		9.3	40.0	57.8	M	9.5	24.1	33.7	
9.3	14.0	21.1	M	9.2	22.3	36.4	R	9.1	52.2	53.9	Sj	10	43.1	19.3		9.5	32.2	38.8	
9.7	30.0	43.3		7.4	42 5.4	14.0	K	9.8	55.8	3.6		9.6	53.0	8.4		9.5	45.7	9.5	
8.7	46.4	10.9	Sj	9.5	20.7	36.6		9.5	54 27.0	55.7		9.8	11 6.9	37.3		9.6	51.4	58.9	
9.5	49.5	19.8		10	39.2	26.1		9.8	39.8	57.3		9.5	7.9	13.3		9.6	56.1	10.7	
9.7	31 8.5	21.2		9.0	59.8	21.7	Sj	7.8	55 13.8	53.5	Sj	7.8	11.0	2.6	Sj	9.3	29 13.7	10.4	
9.1	15.0	12.4	M	9.3	43 20.3	11.7	R	9.6	56 2.0	56.6		7.8	17.2	56.1	Sj	9.5	39.6	32.7	
9.1	18.5	44.7		9.9	28.4	19.9		9.3	33.1	31.3		8.0	17.8	44.7	K	9.1	59.2	35.2	M
9.5	19.9	9.6		9.3	42.9	43.0		8.3	42.7	37.3	K	10	55.3	41.6		9.5	30 2.1	57.7	
9.0	20.3	25.2	M	9.8	50.5	31.6		9.3	48.3	0.9		9.1	12 15.0	36.4	M	8.8	3.2	11.6	K

5601—5660

	21h		—7°	
m	m	s	′	
9.7	30	10.7	13.5	
9.4		28.6	5.5	
9.5		30.0	29.2	
9.3		33.3	52.0	
9.3		36.7	9.7	R
9.5		53.2	57.1	
9.8	31	12.8	14.2	
9.4		33.5	56.1	K
9.8		51.2	17.3	
9.4		52.5	58.6	
8.2	32	41.1	1.5	K
8.2		42.7	27.9	K
7.0		45.7	37.7	B
9.5	33	1.3	46.8	
9.0		23.8	51.5	Sj
9.5		26.2	48.9	
9.8		43.8	5.9	
9.2	34	19.8	15.3	
8.5		53.3	47.2	M
9.8		57.8	25.8	
9.9	35	22.0	1.8	
9.0		40.2	21.0	M
9.0		49.5	3.5	R
8.0	36	33.9	48.9	Sj
9.3	37	6.4	42.3	
8.0		7.8	0.6	M
8.6		16.9	43.5	K
9.5		19.7	32.8	
8.8		29.8	33.1	M
9.8		33.6	32.0	
9.4	38	3.7	13.2	
9.0		13.9	45.7	M
9.8		23.4	46.4	
9.6		49.6	20.4	M
8.8	39	7.9	56.9	
9.9		30.7	34.2	
7.8	40	22.2	8.1	L
9.1		36.5	39.4	
8.9		41.3	22.0	K
9.5		45.9	7.9	
9.6		49.9	12.6	
9.5		59.8	36.7	
9.1	41	16.6	13.7	
9.6		37.3	30.7	
9.5		54.2	43.0	R
9.8	42	39.9	4.7	
9.7		45.1	52.9	
9.3		58.5	59.4	
9.2	43	6.4	48.7	
9.0		43.3	19.8	M
9.2		44.4	40.1	
9.8		53.4	4.9	
9.0	44	18.9	16.2	M
9.5		21.0	8.1	
9.5		22.1	30.2	
9.4		27.9	39.1	R
9.5		38.3	29.3	
9.5	45	3.9	25.7	
9.0		14.3	1.4	Sj
9.1		18.9	10.4	WC

5661—5720

	21h—22h		—7°	
m	m	s	′	
9.5	45	21.8	25.3	
9.1		22.7	41.1	M
9.4	46	1.0	49.4	
8.7		18.9	11.9	K
9.8		41.9	14.8	
9.2	47	21.0	0.6	M
9.5	48	11.6	8.2	
9.5		16.1	53.6	
7.3		34.0	39.7	K
9.5		43.1	7.8	
9.4		46.0	22.4	
9.1	49	19.4	24.8	
9.5		27.1	53.0	
9.6	50	1.0	2.9	
9.8		35.0	4.7	
9.4		45.9	12.6	
9.4	51	3.6	3.8	
9.4		6.0	1.9	
9.5		25.9	11.2	
9.4		33.5	35.3	
9.6		57.6	15.0	
9.4	52	17.1	48.4	
8.5	53	2.6	7.3	Sj
9.3		59.9	56.7	
9.8	54	11.5	4.7	
9.3		52.1	27.2	
9.5	55	30.5	15.6	
6.0		38.8	13.2	Sj
9.5		53.1	4.6	
9.5		55.1	51.2	
9.5	56	0.9	5.7	
9.5		4.5	18.9	
9.5		17.5	59.7	
9.5		47.0	25.9	
8.0	57	26.1	0.1	Sj
9.3		40.0	29.9	
9.5		45.1	0.5	
9.8	58	27.1	7.9	
9.4		34.1	4.1	
8.6	59	7.7	39.3	K
7.6		9.1	25.9	K
9.5		33.0	17.1	
9.3		47.1	4.7	K
9.5		54.9	59.8	
8.6	0	4.1	34.6	M
9.0		27.6	22.8	
9.8		32.1	2.0	
8.2		38.7	5.1	K
9.1		41.9	29.0	
9.6		42.6	24.5	
9.0		50.1	35.8	
10	1	33.1	25.1	
8.5		38.5	56.6	K
9.8		46.2	43.2	
8.7	2	2.2	6.0	K
9.9		23.2	4.8	
9.4	3	27.1	29.4	
10		27.1	19.3	
10		32.2	23.3	
9.4		47.5	41.9	

5721—5780

	22h		—7°	
m	m	s	′	
9.5	4	0.8	38.9	
9.3		3.3	46.8	
9.5		21.8	41.3	
9.5		37.2	21.6	
8.6		42.6	46.6	K
9.9		48.1	11.8	
7.4	5	5.2	11.2	K
10		56.1	19.8	
9.5	6	9.1	19.4	
9.5		30.2	33.2	
9.5		43.8	46.0	
7.7	7	5.3	6.9	K
7.7		17.2	27.0	K
9.1		40.5	28.8	
8.7		49.3	44.9	K
9.5	8	28.5	56.6	
8.5		29.3	47.8	K
9.4	9	9.7	30.8	
8.5		10.6	52.0	K
9.4		47.4	44.6	
9.5		48.5	19.9	
9.5	10	43.1	4.6	
8.8		51.3	21.6	M
9.5		51.4	38.7	
9.7	11	23.0	56.1	
9.5		39.9	7.0	
9.5	12	22.4	43.1	
9.5		22.7	14.5	
9.5		46.2	9.0	
9.6		47.8	35.7	
9.0		56.4	52.0	M
9.5	13	17.9	53.2	
9.0		24.9	41.9	K
10		32.2	18.6	
9.1		36.4	9.7	R
9.5		52.0	21.6	
10	14	20.4	55.7	
9.5		22.2	20.6	
9.9		25.9	17.3	
8.5		30.0	17.8	K
9.5		37.1	45.6	
10		44.4	54.3	
10	15	22.4	42.7	
9.3		42.9	29.8	
6.5		55.5	55.4	K
9.5		56.8	20.4	
9.9	16	19.9	12.5	
9.1		39.6	16.5	
10		49.5	49.9	
9.5	17	7.4	10.7	
10		13.3	28.3	
9.5		18.9	11.1	
9.1		25.5	6.4	K
9.7		33.9	28.2	
10		35.5	52.1	
9.0		49.4	10.2	K
9.7	18	7.5	59.3	
9.3		16.4	37.0	
10		16.5	30.9	
10		30.4	24.0	

5781—5840

	22h		—7°	
m	m	s	′	
10	18	46.4	7.7	
9.2	19	27.5	36.0	
9.5		34.3	13.4	
9.1		40.4	58.6	M
9.8		41.6	44.1	
9.1		48.2	55.2	R
10		52.5	23.4	
9.4	20	20.9	22.6	
9.6		29.6	46.1	
10	21	19.6	36.8	
9.6		20.5	40.0	
8.5		48.8	47.5	B
10		52.4	58.3	
9.5	22	21.7	52.1	
9.5	23	32.5	25.3	
9.3		37.1	49.9	
6.5		41.8	17.8	B
10		42.8	12.0	
9.5		57.7	44.9	
9.7	24	11.0	4.3	
9.8		11.6	36.5	
10		20.5	46.8	
10		21.3	9.7	
9.5		45.0	41.8	
7.4		57.3	12.9	K
9.7	25	11.9	38.1	
9.0		28.5	55.4	K
9.7		35.3	56.1	
9.0		47.7	4.0	M
9.8		54.0	19.1	
9.2	26	47.4	19.6	
9.3		49.9	33.5	
10		51.5	47.8	
9.0	27	11.3	28.8	R
9.6		42.3	7.2	
9.4	28	1.5	36.9	
8.5		11.9	30.4	M
8.7		27.6	49.4	K
9.6		51.1	39.0	
8.9	29	19.1	12.1	K
9.5		48.6	46.9	
9.8	30	20.2	50.3	
9.5		22.1	14.3	
10	31	9.6	53.9	
8.8	32	2.2	44.8	M
9.7		11.7	44.8	
7.5		38.7	17.4	K
9.0		42.1	33.4	K
9.6	33	0.0	27.1	
9.4		44.8	0.1	M
9.8	34	11.6	31.7	
9.1		12.9	18.9	
8.5		47.6	37.9	K
9.7		52.8	17.5	
9.8	35	8.1	40.6	
9.7		35.8	9.4	
8.0		38.6	58.9	B
7.0		40.2	43.3	L
8.2		48.8	9.3	L
10		52.9	5.1	

5841—5900

	22h		—7°	
m	m	s	′	
9.6	36	5.6	54.8	
9.1		15.5	9.9	K
9.6		18.2	18.5	
10		23.0	52.6	
10		57.0	26.7	
10	37	5.4	38.3	
8.5		20.2	39.6	K
9.9		26.9	0.6	
9.6		32.0	6.5	
9.5		37.6	24.6	
9.5		52.3	38.0	
10	38	10.0	4.8	
10		43.1	52.6	
9.8		59.5	7.0	
10	39	0.0	4.3	
10		19.1	54.0	
9.6		23.2	32.6	
8.1		48.6	29.8	B
9.8	40	0.6	45.4	
10		23.5	40.9	
9.0		31.0	19.0	
10		57.6	8.9	
10	41	9.3	28.1	
10		11.2	8.4	
9.3		33.0	54.0	
9.0		36.7	16.7	R
9.6		50.9	1.3	
10	42	18.2	27.7	
9.6		20.7	32.6	
9.8		43.4	4.1	
9.4		46.5	52.2	
9.8		51.4	10.7	
8.2		58.3	40.6	K
10	43	4.8	4.3	
9.7		10.6	19.6	
10		13.3	59.8	
9.1		13.9	44.2	K
9.3		17.8	42.9	M
9.8		40.7	25.0	
9.5	44	4.9	44.4	
10		49.1	51.3	
8.7		53.4	43.1	M
9.5	45	0.7	13.8	
9.8		40.3	19.3	
9.8		58.2	26.9	
7.0	47	1.0	58.6	K
9.4		5.0	2.7	
9.4		38.4	59.6	
9.8	48	0.3	27.7	
9.8		9.7	12.2	
8.8		20.9	15.7	
8.3		48.1	19.2	M
10		53.7	7.8	
9.8	49	21.3	31.2	
9.1		31.8	35.8	K
9.4		41.2	54.9	
8.7	50	11.3	21.7	K
9.0	51	1.7	13.8	
10		14.9	1.0	
9.5		21.8	57.1	

5901—5950

	22h—23h		−7°	
m	m	s	′	
9.5	51	46.9	4.1	
8.6		57.5	22.9	K
9.2	52	15.2	9.5	
9.5		29.0	4.1	
9.5		42.4	30.7	
9.2	53	3.1	50.5	WC
9.4		6.3	59.2	
9.4		46.9	13.2	
9.5		48.2	30.4	
6.8		51.1	49.9	Sj
8.5	54	12.6	44.3	K
10		54.9	17.8	
6.8	55	0.8	21.2	K
10		1.7	4.6	
9.4		8.5	7.5	
9.4		13.1	42.8	
10		16.4	39.4	
9.4		27.5	8.7	M
10		31.5	56.9	
9.6		33.4	53.1	
9.5		58.5	33.9	
9.4	56	10.6	7.1	
10		30.5	57.8	
9.0		39.6	5.9	M
8.0		51.9	28.1	Sj
9.3	57	16.4	24.2	M
10		43.0	20.8	
10		46.0	5.8	
9.5		49.8	23.5	
9.4		50.2	26.7	
8.9		56.4	56.8	K
9.0	58	52.6	36.9	M
9.9		55.1	12.5	
9.8	59	24.6	40.5	
9.6	0	10.9	54.9	
9.8		22.1	13.6	
9.5		28.0	24.3	
9.5		29.9	8.1	
9.5		41.7	7.5	
9.4	1	21.0	23.0	
9.2		22.6	35.7	
10		34.0	5.1	
8.5	2	17.9	52.6	K
9.9		47.5	34.0	
9.7		56.3	35.0	
9.5		59.8	15.7	
9.4	3	10.4	10.6	
10		39.6	19.2	
9.8		50.0	14.5	
10	4	17.3	29.4	

5951—6000

	23h		−7°	
m	m	s	′	
10	4	28.5	11.2	
9.5		32.4	41.7	
9.4		41.8	32.9	
9.7		43.1	50.8	
9.3		58.2	28.0	
9.3	5	15.1	51.0	
9.1		22.5	44.6	M
10		58.1	50.2	
9.1		59.6	6.8	Sj
9.5	6	12.7	5.7	K
9.7		17.6	1.6	
9.7		19.7	24.3	
9.0		42.9	37.0	
9.1	7	8.3	32.8	
9.4		13.7	30.1	
10		14.6	52.8	
9.8		15.4	12.3	
9.6		27.7	3.1	
9.8		38.1	15.0	
10		49.7	15.3	
9.9	8	3.0	5.2	
9.4		12.6	28.1	
8.7		26.5	40.8	K
9.0	9	7.6	48.4	K
7.3		27.8	57.0	K
9.4		56.5	12.2	
9.7	10	17.2	15.7	
10		47.0	6.5	
9.5	11	16.8	22.1	
9.5		26.2	50.2	
9.3		28.7	4.7	
9.0		29.9	30.8	K
9.4		40.3	8.5	
9.5		54.7	0.5	
9.5	12	18.0	29.3	
9.4		23.8	53.6	
9.5		31.0	30.2	
9.3	13	5.3	24.2	
8.7		8.2	14.9	K
8.2		13.4	24.8	K
10		35.1	38.2	
10		41.9	56.5	
8.0		45.1	48.7	Sj
8.9	14	23.9	16.5	Sj
9.8		38.1	42.0	
9.8		52.0	16.7	
9.1		56.2	45.8	K
8.5		56.8	35.5	K
10	15	1.9	24.7	
9.3		28.2	18.2	

6001—6050

	23h		−7°	
m	m	s	′	
8.7	15	31.4	23.5	K
9.4	16	45.4	5.2	
9.5		50.8	1.7	
8.7		57.7	45.8	Sj
9.2		59.5	30.2	
9.1	17	6.6	12.9	
9.7		13.5	10.8	
9.1		38.7	46.9	
10		50.3	49.8	
9.5	18	4.0	24.3	
8.9		37.3	56.1	R
7.0	19	4.9	24.2	K
10		13.2	1.8	
9.3		26.8	50.5	
10		43.2	34.6	
9.4		56.7	19.2	
9.4	20	3.1	27.9	
9.1		7.7	46.2	
9.5		42.4	7.7	
10		57.3	37.3	
9.2	21	4.9	47.9	
9.9		8.3	8.8	
9.4		11.3	8.2	
9.8		28.4	26.0	
9.3		29.9	26.4	S
9.5	22	0.3	38.6	
8.2		7.3	38.3	L
8.7		10.4	6.4	K
9.0		29.9	3.7	K
9.5		30.1	25.3	
10		34.1	24.4	
9.8	23	15.0	25.4	
9.5		19.2	15.8	
9.8		25.9	21.4	
9.8		26.0	3.8	
6.8		32.0	5.0	K
9.0	24	2.7	25.5	K
9.8		12.2	51.7	
9.6		21.8	12.8	
10		25.7	25.8	
10		45.4	41.8	
10	25	2.8	10.0	
10		3.3	34.7	
9.1		5.7	26.7	
9.6		30.0	19.6	
7.7		42.5	12.0	Sj
9.0		52.8	33.5	
9.7		53.7	46.4	
9.9	26	5.2	3.4	
9.6		19.8	48.7	

6051—6100

	23h		−7°	
m	m	s	′	
9.0	26	58.4	17.0	
8.8	28	2.2	57.0	R
9.9		29.5	37.8	
9.3		39.7	1.9	
7.8		49.1	55.1	Sj
9.9	29	9.4	52.2	
9.2		18.9	57.1	
9.2		27.6	31.2	
10		38.8	5.8	
9.7		53.3	6.4	
9.5	30	12.3	1.3	
9.6	31	4.9	46.0	
9.6		43.3	46.2	
10		59.7	19.8	
10	32	0.9	8.9	
10		3.2	24.4	
9.2		42.3	2.2	
9.7	33	12.2	59.6	
9.3		27.3	1.3	
8.2		41.5	16.9	B
9.8	34	49.2	30.4	
9.8	35	57.0	29.5	
9.0	36	0.8	33.1	M
8.3		22.4	4.7	L
9.3		27.9	39.8	
9.6		32.6	18.9	
9.5	37	5.2	24.8	
8.6		20.4	44.7	K
9.4	38	16.3	35.1	
9.3		29.2	23.3	
9.1		48.8	30.7	
8.8		59.4	6.5	Sj
9.3	39	34.0	41.6	
9.4	41	0.1	54.3	
9.2		3.4	35.3	
6.3		5.0	11.4	Sj
9.2		26.5	42.8	
9.8		27.4	3.8	
9.0		39.0	46.1	
9.7		54.3	23.8	
10	42	5.0	38.6	
9.8		12.5	43.9	
8.7	43	23.0	4.3	K
9.5	44	3.4	24.6	
8.7		18.4	24.8	Sj
9.0		23.8	24.8	Sj
9.1		31.0	10.6	
9.5		35.6	45.0	
10		47.3	14.8	
9.1	45	3.4	25.5	

6101—6150

	23h		−7°	
m	m	s	′	
8.9	45	22.7	20.3	
9.4		24.6	46.4	
10		35.3	55.4	
8.3		39.4	27.1	K
9.5	46	5.8	11.8	
9.1		11.5	36.0	
9.8		20.6	1.8	
9.8		30.4	57.0	
9.4		44.1	17.8	
9.0		58.6	38.0	R
9.9		59.7	19.0	
9.5	47	10.0	50.8	
9.7	48	55.7	27.8	
9.4	49	17.1	39.4	
8.7		37.1	3.8	Sj
9.0		44.2	43.2	
9.4	50	7.7	43.7	
9.7		10.6	6.7	
9.2		26.3	54.6	
10	51	1.3	2.7	
9.7		17.5	55.2	
9.5		38.5	24.9	
8.8		48.7	42.1	M
9.8	52	3.5	10.3	
9.6	53	10.2	9.5	
9.2		11.6	36.5	R
10		11.8	4.9	
9.7		18.1	34.0	
9.1		59.7	0.9	
9.6	54	1.4	45.8	
9.7		16.1	24.8	
10		20.4	50.1	
9.4		21.0	29.6	
9.3		36.3	46.4	
9.0		51.9	46.8	
9.6	55	15.9	52.9	
9.2		21.7	4.0	R
9.8	56	3.2	1.1	
9.9		33.3	41.4	
9.1		36.4	47.7	
9.8		48.2	31.9	
8.0	57	5.2	46.3	K
9.1		20.0	17.4	
9.5		30.0	41.6	
9.5		30.3	38.0	
9.8		31.4	59.5	
9.5		59.0	55.8	
9.4	58	29.3	6.7	
9.9		58.8	25.4	
9.4	59	20.9	4.3	

6151—6152

	23h		−7°
m	m	s	′
9.7	59	22.8	0.3
9.2		31.2	45.4

6153

	23h		−7°
m	m	s	′
9.4	59	53.4	56.3

Zone —8°

1—40				41—80				81—120				121—160				161—200			
	0h		—8°		0h		—8°		0h		—8°		0h		—8°		0h—1h		—8°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
10	0	0.0	29.4	9.5	12	2.4	35.1	8.7	23	7.4	53.2	K	9.1	35	17.4	19.5		9.6	47	2.6	52.5	
8.2		15.2	43.7	Sj	7.3		12.7	1.2	Sj	9.0		24.8	16.3	M	9.5		19.2	40.7		9.5		17.4	20.5	
8.0		35.9	21.0	K	9.5		35.9	11.8		9.1		31.4	24.1		9.5		20.9	26.3		8.8		23.4	1.4	K
10	1	0.6	0.4		9.9	13	5.4	44.6		9.3	24	15.9	25.0		9.4	36	2.0	38.2		9.1	48	7.3	38.8	
8.5		24.4	42.2	K	10		10.4	42.4		9.8		27.5	4.5		10		21.7	3.4		8.2		21.7	50.4	K
9.9		25.0	25.8		9.8		13.0	18.1		9.4		56.3	33.4		9.0		22.9	22.5	K	9.8		21.7	57.7	
9.9		34.8	50.2		9.6		19.0	53.6		8.8		57.3	18.6	K	9.5		28.4	26.1		6.2		22.5	7.7	K
10	2	48.8	37.5		10		45.5	40.1		9.7	25	52.2	17.3		9.1		36.4	19.2	K	7.8		49.1	48.4	K
9.5	3	2.7	34.0		9.2	14	14.9	17.9		9.9	26	16.8	40.0		7.6		53.6	40.9	K	8.0		52.2	21.8	
9.1		26.6	4.1		10		51.7	42.5		9.8	27	32.6	0.0		9.2	37	3.9	12.9		10	49	10.7	49.3	
9.7		34.9	49.1		9.5	15	9.8	36.8		9.5		34.0	54.3		10		5.2	29.5		9.5	50	22.4	48.0	
9.1		38.7	38.1		9.5		24.9	58.7		9.5	28	21.8	39.1		9.4		11.4	14.0		9.5		24.6	3.5	
8.5		44.3	10.9	Sj	10		39.5	40.3		8.1		26.0	42.0		9.5		42.3	40.7		9.3	51	9.6	56.4	
9.8		52.6	58.0		9.4	16	3.2	47.9		9.7		34.0	51.1		9.0		53.0	57.7		9.0		26.8	31.8	
9.3	4	29.9	3.3		9.3		12.2	48.2		9.6		45.5	24.3		9.1	38	8.9	12.5	M	9.8		41.5	44.1	
8.5		41.7	30.6	K	9.4		50.7	27.7		9.2		48.6	48.5	B	10		33.3	35.0		9.0	52	22.4	58.6	
9.5	5	25.2	22.4		8.9	17	16.7	44.1		9.1	29	7.1	31.5		10		35.3	45.2		9.4		46.8	13.7	
7.8		43.6	29.6		9.0	18	0.2	21.6	M	10		14.3	24.4		9.7	39	12.6	34.9		9.8	53	2.5	18.0	
9.0		57.8	42.3		9.8		29.7	59.5		9.0		25.5	26.4		9.5		37.3	35.9		9.2		44.9	31.1	
9.8	6	8.6	24.5		9.5		31.0	7.0		10		36.4	21.7		9.5	40	11.3	33.1		9.5		50.8	25.4	
9.5		9.9	27.1		9.2		31.8	43.4		8.9	30	2.7	35.5	K	9.4		15.3	0.4		9.7	54	7.4	7.6	
9.8		15.8	39.6		9.7	19	5.9	54.8		9.6		4.0	25.2		9.5	41	27.0	30.8		9.0	55	9.0	48.5	K
9.5		24.8	55.1		9.6		41.8	31.0		9.5		10.4	39.5		9.5		52.5	24.0		9.8		36.8	17.5	
8.0		45.1	0.0	K	9.1		45.0	6.9		9.4		11.7	58.5		9.8	42	16.1	26.3		9.8	56	17.4	11.1	
9.3		49.5	0.0		8.1		45.9	40.7	K	10		16.7	47.2		7.8		24.6	37.9	Sj	8.9		54.7	57.9	
5.8	7	2.6	35.1	Sj	9.5		51.1	15.9		9.4		29.0	5.8		9.0		27.9	46.2		8.3	57	19.4	27.2	K
8.9		16.5	28.9		9.4		55.1	12.9		9.4		29.7	38.8		9.2		37.9	53.4		9.1		49.8	46.2	
9.3		56.5	2.0		9.5	20	6.0	46.4		9.2		51.9	13.4	M	9.5		42.6	39.7		9.8	58	15.9	24.8	
8.5	8	18.4	6.8	K	9.7		18.3	23.1		9.6	32	2.8	3.7		9.7		45.3	33.0		10		23.7	53.0	
9.8		18.6	16.2		10		26.3	26.3		7.9		23.6	48.1	Sj	9.7	43	46.0	19.5		9.8		26.8	1.9	
9.8		27.3	23.3		9.7		32.5	50.7		10		29.1	52.4		9.5		55.0	43.7		9.8		46.6	22.2	
9.5		35.1	37.9		9.5		40.4	31.1		9.8		34.4	9.1		9.7		59.4	42.1		9.8		49.5	43.0	
10	9	6.7	10.0		10		44.0	9.7		8.5		39.5	40.0	K	9.5	44	17.1	22.9		9.8	59	11.5	14.5	
9.5	10	2.6	19.6		10		47.0	57.5		7.7	33	2.1	26.8	K	8.5		30.8	57.2	K	9.7	0	36.5	28.1	
9.4		7.1	10.0		9.5		56.9	33.0		10		4.7	28.5		9.8	45	0.6	23.3		9.8		49.4	37.2	
10		34.7	39.2		9.8	21	4.1	12.0		9.4		11.2	15.2		9.5		28.6	25.1		9.0		50.3	11.1	
10		45.0	33.8		9.5		30.8	22.9		7.0		25.6	1.3	K	9.7		31.9	41.3		9.4	1	9.8	5.7	
6.5	11	14.8	51.2	K	8.6		43.4	30.2	K	9.7	34	14.5	19.2		9.4	46	7.0	12.4		10		41.8	58.0	
8.8		18.4	25.8	K	9.4	22	18.2	14.2		8.2		30.3	53.2	K	9.1		17.7	38.1		9.3		47.5	26.3	
9.5		48.0	7.4		9.8		49.3	22.7		9.5		34.1	3.7		10		44.6	57.2		9.2		51.5	26.8	

201—260				261—320				321—380				381—440				441—500			
	1h		−8°		1h		−8°		1h		−8°		1h—2h		−8°		2h		−8°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.0	1	57.6	35.5	9.4	23	32.9	51.7	9.1	42	9.0	8.7	9.6	59	36.6	36.4	10	17	19.7	14.2	
9.1	2	1.9	54.1	9.4		47.3	53.3	9.3		21.6	0.1	9.8		54.5	53.8	9.0		23.4	33.6	K
9.3		15.3	53.6	9.7	24	32.9	13.0	9.4		29.6	15.0	10		59.6	21.6	9.5		59.4	12.3	
9.4		24.4	40.9	9.7		44.8	4.7	8.2		40.6	1.3	K	9.5	0	11.5	38.6	9.8	18	8.7	40.6	
8.8		44.3	0.5	8.8	25	37.0	54.0	K	8.3	44	8.4	47.6	K	9.0		41.6	33.0	9.1		15.0	53.5	K
9.6		47.9	43.5	9.4		39.2	45.1	8.3		17.2	27.2	K	9.0		46.8	41.9	9.1		42.1	52.2	K
8.8		51.5	29.7	R	9.3	26	1.4	14.4	8.8		31.4	49.6	K	9.4		47.2	4.8	9.7		51.9	52.9	
9.0	3	32.0	49.5	9.5		29.1	39.3	9.3		56.4	34.2	9.6	1	6.5	8.4	9.5		55.8	26.0	
9.1	4	13.5	49.5	8.2		49.1	18.6	K	9.5	45	0.5	58.2	10		12.9	49.2	9.5	19	16.5	39.0	
8.1		24.2	41.8	K	9.5		50.4	38.1	9.3		17.9	55.1	9.4		38.0	3.2	9.8		21.0	12.6	
10	5	29.5	16.3	9.5		54.6	55.8	9.0		27.7	22.8	9.0	2	3.1	32.9	9.7		29.1	44.0	
9.1		37.6	17.9	9.4	27	26.7	40.5	8.5		39.3	32.8	K	9.5		17.9	27.8	9.4		48.3	29.6	
9.7	6	11.5	20.8	8.6		31.1	7.0	B	9.1		48.3	26.6	9.8		30.8	49.2	9.2	20	43.4	59.2	
7.8		38.1	23.1	K	8.2	28	3.3	18.7	K	10	46	25.6	40.1	9.8		48.1	10.5	9.6		48.2	59.0	
8.3	7	4.2	40.7	K	10		9.3	43.4	10		50.0	21.4	9.0	3	36.4	22.2	9.5	21	10.7	18.6	
5.2		6.5	41.6	K	10		40.7	21.6	9.4		53.3	2.3	9.7		57.5	44.7	9.1		12.9	1.0	K
10		21.2	4.7	9.2		55.1	18.3	9.4		59.8	48.3	9.0	4	1.1	0.5	K	9.5		30.6	13.0	
9.1		31.8	42.5	8.3	29	34.2	11.1	K	9.2	47	12.6	35.7	9.6		1.3	13.3	9.3		41.0	34.9	
9.6		50.9	10.9	9.8	30	5.0	26.9	8.2		14.1	5.1	K	9.8		12.7	27.1	9.6		42.7	51.2	
9.1		55.5	48.1	9.7		5.4	5.7	9.8		45.1	39.2	9.1	5	8.2	12.9	9.1		45.0	59.8	
9.7		58.2	35.9	9.0		24.9	27.8	10		45.1	12.1	9.0		34.8	14.6	9.5		49.9	27.6	
9.8	9	1.6	19.3	9.5		41.6	54.5	9.5		48.0	43.2	9.7		36.7	43.2	10		52.1	43.2	
9.7	10	20.7	23.5	9.7	31	22.7	43.3	9.6	48	12.7	12.5	9.0		45.6	19.9	K	10	22	12.2	41.6	
7.5		25.1	25.7	K	9.7		37.5	27.9	9.8		30.8	20.3	9.6	6	8.7	13.1	9.5		34.0	7.7	
9.5	11	16.3	23.6	9.5		38.7	20.3	9.5		57.0	6.0	8.8		19.1	4.2	9.0		43.8	43.1	K
9.1		27.7	23.8	K	9.0		56.4	0.7	K	7.5	50	0.5	31.6	K	8.5		41.7	38.3	K	10	23	23.6	24.3	
8.6		38.7	28.0	K	9.5	32	10.2	34.1	9.5		1.8	24.2	9.5	7	16.6	6.2	9.2		36.6	13.0	
9.8		40.2	56.7	9.0		16.7	8.0	K	9.2		9.9	49.5	K	9.8		18.6	32.3	7.5		46.5	38.5	K
8.6		44.3	45.4	K	8.5		47.3	10.8	K	8.2		19.2	14.4	K	9.1		32.8	14.0	K	8.9	24	12.9	27.4	K
9.0	12	11.2	51.5	K	9.4	33	9.6	55.4	9.5		28.5	32.0	9.1		41.8	46.8	9.1		25.7	14.4	
9.5		48.0	2.4	9.6		25.4	45.2	9.5		32.5	50.7	8.3		50.6	14.7	K	9.6		27.7	55.2	
9.5	13	4.0	41.7	9.5		36.9	13.8	9.7		56.7	2.6	9.5	8	28.2	55.9		9.4		33.1	35.8	
8.8	14	9.0	45.6	K	9.5	34	13.1	53.9	9.8	51	0.8	47.2	9.4		30.2	8.4	9.4		43.0	37.6	
9.5		25.3	45.2	9.7		22.5	41.8	8.2		17.3	19.5	K	9.1		55.7	54.3	9.6	25	1.9	2.3	
9.8		30.4	10.0	10		34.3	31.1	8.8	52	18.1	42.7	K	9.0		57.8	8.5	K	9.0		12.9	26.2	
9.8		37.7	5.7	10		36.0	58.4	9.5		20.2	49.1	9.5	9	29.6	26.7		9.9		34.0	1.6	
9.1	15	8.0	2.9	K	8.8	35	17.2	51.6	K	9.5		21.2	9.5	9.0		39.5	19.8	9.4		38.8	21.8	
9.2		28.2	15.7	9.0		37.3	35.8	9.3		39.7	10.0	9.5	10	33.5	22.3	9.9	26	4.3	57.1	
9.3		31.3	41.6	9.5		54.6	30.7	9.5		57.6	50.2	9.0		37.4	50.9	9.4		8.2	37.5	
9.8		32.8	24.6	10	36	16.1	51.6	8.8	53	32.1	4.8	K	9.0	11	12.7	5.5	K	8.8		49.1	36.3	K
9.5		34.4	48.0	9.9		34.2	48.5	10		48.1	28.1	9.2		23.8	46.4	9.5		49.3	2.6	
9.8	16	43.9	28.0	7.5		37.9	12.9	K	9.9		53.6	33.5	7.5		40.8	7.7	K	10	27	5.9	41.4	
6.7		45.1	45.7	K	9.1		45.7	58.0	9.5		58.8	20.2	9.4	12	53.5	17.3		9.7		29.6	46.6	
3.2		46.4	55.6	K	9.7		53.2	20.2	9.5	54	19.1	51.1	9.8		59.6	22.0		6.0		33.0	29.4	K
10	17	12.0	40.9	9.8	37	37.1	49.5	9.7		43.1	40.2	9.6	13	8.6	46.3		8.7		54.9	21.4	K
9.7		34.4	2.6	9.5	38	44.1	38.0	9.6		46.5	45.9	9.1		14.5	59.2		10		55.9	48.8	
10		48.1	25.0	9.4		46.6	24.1	8.3	55	10.5	9.5	K	9.5		57.2	6.7		9.4	28	18.3	23.0	
9.6	19	8.3	21.4	9.2	39	2.6	50.5	9.5		51.6	15.8	7.3	14	30.7	12.3	K	8.9		50.0	30.3	K
9.5		19.7	2.9	9.5		10.5	17.7	9.0		52.8	6.5	K	9.2		40.1	37.8		6.0		51.5	27.7	K
8.6	20	12.5	5.7	K	9.8		51.3	50.5	9.8		54.3	1.6	9.0	15	0.3	8.8	K	9.8	29	18.3	55.6	
9.3		20.3	20.7	9.5	40	8.7	28.7	9.3		55.4	7.0	K	9.6		7.4	33.5		9.1		23.0	26.6	K
9.4		20.6	3.6	8.3		17.3	36.3	K	9.5	56	41.8	24.8	9.4		26.5	49.5		9.5		28.3	57.5	
9.7	21	6.2	5.8	9.8		42.2	53.1	9.9		54.5	13.2	9.4		37.9	38.4		8.3		49.4	58.6	K
9.2		18.5	36.2	9.6	41	6.4	10.3	9.0	57	36.9	34.7	K	9.2	16	4.4	6.0		9.5	30	13.6	34.4	
9.6	22	20.5	1.2	9.5		9.2	29.7	9.8		59.2	47.8	8.3		7.8	28.3	K	9.4		22.0	29.9	
9.8		31.4	15.1	9.0		13.4	59.1	9.5	58	4.2	18.8	10		18.5	46.3		9.1		27.2	40.7	
9.8		38.4	12.4	9.3		40.7	6.3	9.1		18.8	42.7	10		19.7	43.6		8.3	31	11.3	13.5	K
8.9		56.2	40.5	9.1		50.0	9.5	10		42.2	17.0	8.9		51.4	31.4	K	8.3		27.0	9.5	K
9.8	23	21.5	21.6	9.7		50.3	2.6	9.5	59	15.7	13.5	9.1		54.8	48.5		8.6	32	12.9	53.0	B
7.9		29.8	49.0	K	9.4	42	5.7	24.6	9.5		17.2	14.4	7.9		59.2	3.6	K	9.5		20.7	40.5	

501—560				561—620				621—680				681—740				741—800			
	2h	—8°			2h—3h	—8°			3h	—8°			3h	—8°			3h—4h	—8°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.1	32 47.6	36.2		9.0	53 56.2	56.9		9.4	10 47.3	12.1		9.4	30 1.1	57.6		9.5	45 41.2	40.5	
9.8	49.2	57.0		6.0	54 2.1	14.1	K	9.7	11 48.0	19.0		9.6	32.2	13.2		9.7	56.4	13.6	
9.5	33 15.1	11.7		9.2	8.1	5.4	K	9.5	51.7	46.7		9.0	39.6	44.0	K	9.7	46 16.1	50.3	
8.5	15.4	3.3	K	8.8	15.3	59.3	K	9.5	12 2.3	51.7		9.8	42.0	52.9		8.5	24.7	26.7	Sj
9.5	49.2	7.4		9.2	27.7	19.5		9.4	7.5	51.7		8.8	46.9	8.6	K	9.5	47 15.4	31.1	
8.7	55.0	30.0	K	9.4	50.0	6.6		9.0	29.6	24.8		9.5	47.3	52.9		9.2	16.5	12.4	
9.9	58.3	53.4		9.1	55 20.0	36.8		9.6	33.0	43.0		10	47.6	33.9		9.6	18.9	54.4	
9.7	34 9.1	30.7		6.0	35.1	14.9	Sj	9.5	35.5	17.4		8.3	50.6	7.5	K	9.1	21.9	2.8	K
9.3	52.6	43.4		9.3	55.0	57.2		9.9	42.4	50.7		9.0	56.4	58.6		10	31.2	56.3	
9.5	35 9.4	2.8		9.1	56 2.5	35.9	K	10	13 9.9	43.6		8.0	57.8	21.1	Sj	10	33.9	53.1	
9.0	27.6	4.0	B	9.0	7.8	49.7		9.3	20.7	27.5		9.4	31 39.0	49.4		8.2	40.1	20.3	K
9.5	53.7	31.9		6.0	57 9.6	10.0	Sj	8.8	47.0	0.4	Sj	7.2	48.4	58.7	Sj	9.4	47.5	5.7	
8.5	36 12.5	54.3		9.1	27.0	30.1		9.8	53.1	54.3		9.1	57.9	24.0		9.8	57.7	46.0	
9.5	44.7	29.3		9.5	28.6	8.9		9.8	53.7	49.4		8.3	32 25.1	29.2		9.8	48 12.8	56.5	
6.8	47.7	31.7	K	9.3	40.3	19.0		9.8	14 8.2	27.7		9.4	35.0	22.1		9.8	20.8	59.2	
8.5	37 33.0	37.3	K	9.8	45.2	52.0		9.4	22.5	51.6		8.3	37.2	18.3		9.2	42.7	26.0	
9.0	39.5	38.7	K	6.9	58 5.5	50.7	K	8.5	35.0	1.3	Sj	9.3	37.8	50.2		7.6	49 3.3	3.9	Sj
9.4	51.5	55.4		9.5	25.1	1.1		9.2	44.8	38.0		10	33 14.3	33.3		9.5	17.1	19.5	
10	55.5	23.4		9.1	38.8	20.2		9.0	15 0.8	57.4	K	8.0	14.9	33.4	Sj	9.7	34.3	55.0	
10	38 21.6	50.5		9.4	59 7.0	0.5		9.5	2.2	27.0		9.1	25.2	35.8	K	8.5	50 6.1	53.2	
10	48.5	54.9		9.8	30.3	36.3		9.3	42.8	41.0		9.8	26.0	40.4		9.8	8.7	54.6	
8.0	39 25.2	38.2	K	9.1	33.5	51.2		9.7	16 4.9	57.7		10	34 3.6	7.6		8.8	28.7	23.1	
9.1	48.2	34.3		9.3	41.5	51.0		6.5	12.1	18.0	K	10	11.4	7.8		9.1	44.4	45.2	
10	49.0	14.0		9.4	0 12.1	6.8		9.1	37.4	10.0		9.5	32.9	28.5		9.8	51 54.2	17.8	
9.2	40 21.2	42.9		9.8	28.7	48.6		9.4	40.8	33.4		9.2	35 10.5	3.7		8.9	52 12.7	3.3	Sj
9.9	41 18.9	43.2		9.1	29.8	16.7	R	9.8	18 2.8	29.0		9.0	16.7	8.3	K	9.7	41.7	36.5	
10	38.5	58.5		9.1	40.9	24.0		9.5	4.2	19.9		9.2	37.5	59.9		8.8	45.9	34.3	
9.3	47.5	20.9		9.8	1 17.2	45.7		8.2	41.8	43.7	Sj	9.1	56.4	33.9	K	9.0	53 8.0	59.7	
9.2	53.4	17.6	B	9.4	25.8	43.8		10	54.6	23.3		8.8	36 30.6	31.7	Sj	8.9	54 31.4	1.7	Sj
9.6	55.2	1.5		9.5	26.3	45.9		9.4	19 4.7	26.9		7.5	52.9	20.4	K	9.1	55 8.8	42.1	K
10	42 16.9	13.8		9.5	2 11.9	23.2		10	19.2	3.3		9.6	54.0	40.3		9.1	16.9	23.4	K
10	43 9.1	56.0		10	17.2	42.3		10	22.7	27.9		9.2	37 15.3	13.0		9.5	48.4	22.2	
9.5	30.6	23.1		8.8	45.8	20.9		7.8	51.8	29.7	Sj	9.5	22.1	51.2		9.3	55.1	41.3	
8.8	44 6.6	55.9	K	9.5	3 11.5	32.5		9.5	20 15.1	1.0		9.8	32.6	33.8		8.4	56 2.3	40.5	K
9.1	38.5	52.1		9.1	13.8	58.1		9.1	39.4	56.7		9.6	38.0	6.1		9.6	47.2	36.9	
7.8	45 8.6	51.9	K	9.8	58.7	6.7		9.3	21 3.5	27.3		9.3	40.9	30.0	Sj	9.1	57 8.0	50.9	Sj
9.4	15.2	30.5		9.8	4 20.4	39.3		9.8	22.1	43.4		9.6	38 15.5	26.5		9.5	15.7	33.7	
9.2	17.5	31.6		9.5	52.4	53.6		9.1	22 8.0	34.9		7.9	22.5	23.8	K	8.4	19.2	39.1	K
9.4	30.7	49.2		8.9	5 22.6	35.7	K	9.4	55.2	55.4		10	23.8	53.0		9.8	35.8	0.5	
9.2	51.2	0.1		8.8	27.7	11.8	K	10	23 19.7	53.5		9.3	30.7	5.4		9.5	37.6	20.2	
9.2	57.0	17.2		9.3	51.5	39.8		9.5	30.2	18.7		9.6	48.2	48.4		9.8	40.0	41.6	
9.6	46 27.9	45.6		9.3	53.2	35.9		9.6	57.2	54.9		9.5	39 15.8	5.9		9.1	58 7.9	58.9	
7.0	28.1	19.9	Sj	9.3	6 20.1	29.9		9.7	59.4	0.8		8.3	21.0	37.4	Sj	9.8	14.7	31.3	
9.7	47 5.1	55.8		9.1	30.7	3.3		9.0	24 0.2	36.4		10	32.3	46.9		9.4	24.3	12.1	
9.7	25.1	21.6		9.9	44.5	54.2		9.7	57.3	25.8		8.4	59.4	49.1	K	8.0	59 16.6	13.4	K
9.5	34.4	36.3		9.5	7 12.7	36.3		7.3	58.8	19.5	K	9.3	40 19.3	12.3		9.2	24.3	13.9	
8.1	48 1.3	35.0	K	9.8	31.6	45.7		9.4	25 7.3	36.7	K	10	52.0	33.4		8.5	41.5	53.0	Sj
9.1	17.6	53.6		8.5	44.5	40.4	K	8.3	21.2	57.5	K	8.3	41 3.3	29.4	K	9.5	47.9	4.0	
9.6	39.5	51.0		9.5	8 8.0	23.5		9.5	29.4	4.9		9.6	42 6.0	19.1		9.8	0 17.0	56.6	
9.5	41.6	19.8		9.7	18.8	6.2		10	43.5	35.7		8.8	28.4	40.5	K	9.5	24.0	51.0	
9.5	49 9.7	5.6		9.3	27.8	40.4		9.7	46.9	48.6		9.8	40.2	29.2		9.0	49.5	20.1	K
8.3	20.0	15.2	Sj	9.3	35.4	54.0		9.5	26 33.5	4.9		9.2	44.8	34.6	K	9.0	1 8.2	12.5	K
9.8	43.7	24.0		9.8	47.0	54.4		9.8	52.8	57.7		8.5	50.3	30.5	K	10	18.0	54.2	
9.5	51.6	57.9		7.5	9 1.6	27.5	Sj	9.5	27 52.6	44.3		9.4	43 31.9	48.2		10	29.6	14.6	
9.5	50 27.0	8.1		9.7	56.1	2.3		8.8	28 6.3	21.2	K	9.8	44 4.1	2.3		9.3	30.2	27.7	K
9.3	38.1	53.0		9.5	58.5	26.9		9.1	42.2	16.8	Sj	9.1	28.4	34.9		9.0	34.9	19.6	K
9.1	52 15.9	40.2		10	59.9	53.6		9.6	44.2	50.0		9.0	29.1	4.7	Sj	9.0	55.6	29.2	K
9.5	48.7	40.4		9.1	10 2.2	36.3		9.7	29 12.0	33.0		9.5	51.2	43.2		7.2	2 19.2	18.7	K
7.8	53 17.9	42.6	K	8.8	24.1	10.2	B	9.8	39.7	48.6		9.2	45 23.5	39.6		9.5	22.0	2.7	
9.2	27.6	16.2		9.1	29.4	32.7		9.1	39.9	59.4	B	8.2	36.6	55.1	K	9.4	31.1	17.4	

801—860				861—920				921—980				981—1040				1041—1100			
	4h	—8°			4h	—8°			4h	—8°			4h—5h	—8°			5h	—8°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
7.2	2 39.6	16.4	K	9.0	19 24.7	11.8		9.3	36 3.9	10.7		10	49 55.4	44.0		9.0	2 19.9	43.2	
9.5	40.8	4.5		9.8	46.1	52.5		9.5	16.3	0.9		9.8	55.5	55.9		9.5	35.9	3.5	
9.3	50.3	24.1		8.7	20 24.8	43.6	K	9.0	18.6	46.6		9.8	59.2	15.4		9.5	3 8.1	14.1	
10	3 16.3	59.6		8.2	33.2	31.3	K	9.3	29.4	47.2		7.1	50 1.5	41.0	L	9.0	9.9	39.6	
9.1	31.3	13.8		9.4	48.3	57.8		9.7	40.6	5.2		9.0	5.8	56.9	K	9.2	34.7	19.1	
9.8	4 44.1	16.4		8.9	48.8	41.4	K	9.6	42.3	43.5		9.8	31.8	22.2		9.8	51.4	40.1	
8.9	59.0	31.8		10	21 31.2	29.1		9.1	50.9	31.0	Sj	9.4	32.1	50.4		9.5	56.8	28.5	
9.8	6 9.0	58.3		9.5	22 25.3	14.4		10	53.3	3.5		9.8	49.2	8.7		9.5	4 5.6	11.9	
9.4	35.6	45.2		9.0	23 9.0	22.4		5.8	37 7.3	46.2	K	8.8	51 1.2	17.0	K	9.5	10.8	37.4	
9.4	53.4	49.0		10	24 5.6	54.2		10	17.4	5.5		9.8	16.8	20.5		9.0	16.6	44.3	
9.9	7 58.8	49.5		9.2	37.2	8.9		9.5	29.8	23.4		9.5	22.0	54.6		9.0	22.1	48.5	K
9.3	8 4.1	12.6		9.2	25 7.8	44.3		9.7	33.7	47.9		10	23.6	35.0		9.5	55.9	41.4	
9.7	8.5	55.1		10	38.1	27.8		9.8	46.6	18.2		9.1	33.1	9.6		9.1	57.6	1.1	K
9.0	28.1	34.6		9.8	48.8	21.1		9.0	38 12.5	32.3	K	8.8	37.0	8.2	K	9.5	5 12.7	3.7	
7.8	44.0	59.7	K	9.0	53.1	27.6	Sj	9.5	35.1	13.7		9.4	51.0	57.3		9.3	12.9	46.8	
9.7	54.4	33.7		9.1	55.9	14.7	K	9.8	39 1.7	22.3		9.8	56.4	48.0		9.0	32.9	48.5	
9.9	54.7	36.9		9.5	57.0	19.9		9.5	23.8	54.0		9.6	52 14.5	25.5		8.0	59.6	14.1	Sj
10	9 10.7	26.6		9.0	26 7.7	53.9	K	9.1	53.5	35.7		8.0	18.1	0.2	K	10	6 16.8	43.1	
8.8	12.5	30.1		8.2	28.3	8.6	K	9.7	40 46.7	44.7		9.2	24.1	58.7		7.0	34.7	19.0	Sj
8.8	14.1	33.5	K	9.5	31.0	17.3		9.4	47.6	25.3		8.6	54.4	2.4	K	9.3	53.9	40.0	
10	22.4	51.9		9.1	31.6	59.6	K	8.9	54.4	57.6	Sj	9.0	53 1.8	18.9	K	9.0	7 5.2	5.8	
9.5	31.0	26.3		9.4	35.6	50.1		8.5	41 1.5	32.7	K	9.5	17.0	6.5		9.5	14.9	45.8	
10	59.2	29.4		9.7	37.4	17.3		9.1	2.0	22.6	K	8.6	20.9	13.7	K	1	33.7	22.1	K
9.1	10 36.1	0.3		7.0	38.8	33.8		9.3	31.0	0.5		8.6	23.0	51.9	K	9.6	42.2	9.1	
9.2	48.0	29.6		8.8	46.8	9.1	K	9.5	48.1	11.9		8.5	28.5	30.3	K	9.0	49.9	47.1	
9.4	11 6.9	23.8		9.0	57.5	37.8		8.8	58.5	8.8	K	9.8	54 10.7	5.5		9.5	50.9	42.7	
9.3	12 8.6	31.0		4.6	27 13.6	32.0	Sj	9.8	42 14.3	25.0		8.5	21.8	56.3	K	9.3	8 7.0	8.6	
9.5	14.7	18.6		9.3	13.7	25.0		8.0	29.7	22.5	K	9.1	26.9	0.5		9.3	45.1	52.4	
7.3	31.5	28.3	K	9.4	39.4	5.7		8.7	39.8	50.3	K	10	53.8	14.2		9.5	46.8	18.9	
8.8	32.5	54.0	K	9.6	39.6	42.6		9.5	57.5	37.1		9.6	55 44.7	39.0		9.5	9 3.7	11.7	
9.6	39.3	46.5		8.5	28 8.8	59.4	K	9.0	43 3.8	53.5	K	8.0	51.3	24.9		9.3	14.0	42.1	
9.5	13 9.8	7.5		8.0	22.4	35.6	Sj	9.0	4.5	48.8	K	9.4	56 4.8	34.9		9.0	29.9	31.4	
10	30.4	34.3		9.5	23.3	34.9		10	18.2	23.6		7.0	5.5	52.2	K	8.8	42.0	38.1	K
9.7	42.7	44.6		7.7	29 51.9	45.2	Sj	9.4	20.0	43.1		8.8	8.6	7.5		9.3	45.1	51.9	
10	57.6	21.1		9.8	30 1.5	40.4		9.5	28.0	43.4		9.5	22.3	7.5		9.5	10 1.9	28.3	
9.4	14 9.9	39.8		8.6	12.2	43.5	K	8.5	44 0.9	26.1	K	9.5	27.4	22.1		9.3	11.2	11.3	
10	22.6	7.4		9.1	27.8	57.7		9.1	3.8	5.4		9.6	57 5.8	38.9		9.2	14.1	3.2	
9.5	23.0	5.0		8.5	34.9	39.9	Sj	9.5	33.8	40.6		9.3	15.9	19.2		8.4	47.8	48.7	K
7.8	35.6	27.3	K	10	54.4	35.4		10	43.2	21.7		8.5	24.6	26.1	Sj	8.0	11 3.0	22.9	K
10	52.9	17.0		10	31 15.7	45.1		7.3	43.4	39.0		9.1	29.2	13.0		10	27.7	51.2	
9.5	15 14.1	7.6		8.5	21.8	34.1	Sj	8.6	50.3	5.6	K	9.0	48.2	34.0		9.3	29.9	2.6	
9.0	22.0	54.5	K	9.6	40.6	1.3		9.0	45 13.0	4.3		8.8	53.2	30.0		9.6	36.4	43.5	
9.1	41.9	40.9		7.7	53.9	31.2	K	8.0	21.0	8.2	K	8.4	58 3.3	45.6		9.3	54.3	49.5	
8.5	46.7	45.6	K	10	32 1.9	57.0		8.6	23.1	55.6		9.8	6.2	42.5		9.5	12 4.1	12.1	
9.0	16 6.6	26.8		9.3	18.2	30.6		9.1	48.4	55.4		9.0	10.7	29.7	K	9.1	7.5	48.4	
7.5	18.6	2.4	K	9.4	23.5	16.4		8.8	49.7	53.9		9.5	18.7	12.2		9.5	16.2	18.8	
9.1	54.8	53.6		9.2	37.7	0.5		9.5	54.3	23.3		9.3	20.6	8.9		9.1	30.2	8.2	
9.8	59.2	12.0		9.5	47.1	20.0		9.5	55.4	39.1		9.8	43.8	34.9		9.2	41.0	12.5	
9.5	59.4	32.3		9.8	49.8	53.1		9.6	46 1.2	48.5		9.1	49.2	42.7	K	9.3	44.1	5.7	
10	17 14.4	3.0		9.2	33 28.0	5.0	K	9.0	18.1	10.4		10	57.6	26.3		10	52.6	5.5	
9.4	28.8	41.7		9.7	51.4	0.1		9.2	59.6	34.7	K	10	59.5	22.7		9.5	58.2	31.8	
10	46.1	5.7		9.3	57.3	6.1		9.8	47 5.4	18.9		10	59 18.4	17.8		8.0	13 25.1	10.4	K
9.0	47.9	22.2		9.2	34 3.6	57.1		9.5	49.6	48.1		9.0	59.9	44.6		9.0	25.8	10.3	K
9.5	18 7.5	52.1		8.1	30.2	27.7	Sj	9.7	55.6	49.0		9.4	0 24.6	12.0		9.7	43.3	40.2	
9.0	8.3	37.6	K	9.1	44.0	0.2	K	9.5	48 21.2	8.4		7.5	30.0	50.4	K	10	57.2	25.4	
9.5	10.0	49.9		9.1	35 21.8	54.3	K	9.5	23.3	48.2		9.0	52.8	36.6	K	9.0	14 11.2	26.7	K
9.4	13.6	0.3		9.7	24.3	3.0		9.4	39.5	28.1		7.0	1 24.1	51.1	Sj	9.5	57.2	28.1	
9.5	32.4	19.1		9.3	33.7	49.6		8.2	47.0	8.0	K	9.2	25.8	51.3	K	9.8	15 11.2	2.2	
9.5	50.8	18.9		9.5	51.3	54.6		9.7	49.9	49.4		9.7	56.6	52.1		7.0	22.4	48.1	K
9.5	19 9.3	40.5		9.4	58.5	12.2		9.3	49 33.4	4.7		4.2	2 12.2	56.4	K	9.0	23.2	24.0	

887: rothgelb

1101—1160				1161—1220				1221—1280				1281—1340				1341—1400			
	5h	—8°			5h	—8°			5h	—8°			5h—6h	—8°			6h	—8°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.2	15 43.0	0.7		9.3	26 4.3	31.2		10	41 27.3	30.8		9.2	53 50.5	57.1		9.8	4 25.0	1.6	
9.1	54.1	2.0		10	17.2	19.1		9.5	37.1	12.0		9.3	51.4	44.6		9.0	5 15.7	46.4	
8.8	55.0	14.1	K	9.5	19.1	12.4		8.5	43.5	58.4	K	9.5	54 5.1	13.3		9.5	26.1	4.2	
9.3	56.4	44.9		9.5	47.4	41.0		9.5	42 6.1	14.2		9.5	13.1	9.7		9.5	35.4	23.6	
8.4	16 6.3	14.8	K	9.2	52.1	11.6		8.9	7.2	27.1	Sj	10	30.5	23.5		9.0	44.2	51.1	
10	18.2	41.2		9.7	27 19.3	33.9		9.5	15.5	4.9		9.5	50.4	45.8		6.7	59.6	41.6	B
6.7	21.3	33.4	K	8.5	32.2	19.1	K	9.5	43 3.4	49.9		9.5	55 7.0	2.2		10	6 2.3	12.3	
9.5	35.5	37.9		8.7	59.4	5.2	M	9.5	4.3	33.8		9.3	13.3	38.7		9.8	4.3	13.2	
8.5	45.2	25.3	K	10	28 15.1	11.1		9.4	41.0	0.8		9.3	13.9	47.2		9.5	11.4	18.6	
9.0	47.2	24.0		9.0	21.2	22.3		9.8	44.7	16.8		9.0	21.0	35.1		10	15.5	44.0	
9.3	51.2	20.0		8.0	30.4	44.6		9.4	53.0	20.9		9.3	27.4	44.9		9.5	22.4	25.6	
10	17 13.4	43.2		10	42.1	11.0		9.0	57.5	53.0	K	9.5	32.0	1.3		9.3	33.2	38.8	
9.5	21.2	0.3		10	29 8.5	56.2		9.5	44 1.9	2.2		9.5	39.3	33.3		9.5	42.4	55.4	
9.4	27.4	47.6		9.6	53.4	4.3		9.3	17.1	11.9		9.5	44.3	35.1		10	44.6	25.4	
9.2	40.4	50.7		9.5	30 0.5	54.3		9.5	20.0	54.3		9.4	51.5	0.6		8.8	45.1	37.6	M
10	18 1.2	22.6		9.5	14.1	12.3		9.5	58.1	7.8		9.5	56 4.2	18.6		9.8	7 2.0	30.7	
9.0	8.4	51.2	K	8.8	16.3	36.0	M	9.3	45 0.4	42.2		9.5	40.5	55.6		9.3	18.6	48.7	
9.2	24.2	27.5		8.7	16.8	38.2	M	9.5	1.2	17.2		9.5	42.4	50.7		9.0	26.0	58.5	K
9.3	19 5.4	40.5		10	38.3	32.0		9.3	29.5	2.4		10	47.0	4.3		9.7	26.3	32.0	
9.8	7.1	33.1		8.0	39.2	18.2	K	8.8	39.0	1.5		9.5	53.1	15.5		9.4	43.8	18.2	
9.2	17.1	11.9		10	53.2	25.8		8.9	47.2	22.0	K	9.5	57 4.2	19.5		7.5	59.2	45.7	B
9.5	43.0	53.3		9.5	31 5.3	31.1		9.3	46 22.8	21.3		9.5	9.1	12.4		9.1	8 1.8	47.0	
9.4	20 5.4	46.1		7.0	43.3	32.8	Sj	8.5	26.1	8.7	K	8.5	15.4	43.2	K	10	7.5	20.0	
9.5	12.3	30.5		9.3	46.5	53.8		9.8	26.4	27.4		10	33.1	13.3		7.8	8.6	35.1	K
9.0	29.2	27.8	K	9.0	32 5.5	53.4		9.8	30.3	22.2		9.5	40.5	52.6		9.4	15.0	41.0	
9.0	41.4	50.6		9.5	10.3	38.2		9.5	40.7	3.4		10	42.3	35.2		9.4	17.9	54.5	
10	44.8	1.4		9.0	13.5	53.4	K	9.7	49.2	1.8		9.5	45.4	49.9		9.3	23.1	33.3	
8.2	46.2	27.0	K	9.4	25.8	8.6		9.5	59.2	19.5		9.3	50.2	2.5		6.3	31.0	59.4	M
9.8	21 15.2	20.7		9.8	28.9	16.2		10	47 23.1	35.1		9.5	58 9.2	16.7		9.5	40.2	39.9	
10	16.2	18.5		9.5	31.6	13.5		7.0	32.2	27.1	Sj	8.5	12.0	0.4	K	9.4	49.3	22.6	
9.3	27.1	11.3		10	49.9	28.1		10	48 29.1	14.4		9.3	15.1	10.4		9.1	9 14.7	47.2	
9.7	42.9	48.4		9.5	33 3.3	34.7		9.5	30.1	7.3		9.0	24.5	56.9	K	9.8	44.0	12.2	
8.5	44.3	29.6	K	10	26.4	50.3		9.0	38.4	50.2		9.3	27.2	17.2		9.5	47.4	26.7	
9.0	57.2	19.8		10	37.5	54.3		9.0	40.5	58.7		9.7	43.0	1.6		9.8	50.3	17.0	
9.5	58.4	49.3		10	52.2	21.2		10	45.1	8.2		9.5	59.4	48.9		9.8	10 6.9	58.6	
9.3	22 9.3	36.3		9.0	57.4	40.0		9.0	53.0	45.7		9.8	59 17.1	11.0		9.6	18.2	50.4	
9.5	15.2	25.1		7.5	34 3.1	7.3	L	9.5	57.1	10.9		9.0	18.5	52.5	K	9.5	27.3	3.4	
10	31.3	37.7		9.1	35 7.4	2.1		9.1	49 3.7	38.1		9.5	21.4	45.4		9.5	36.5	58.2	
10	39.5	52.7		8.7	23.1	12.7	K	9.5	3.9	43.6		8.5	23.2	20.8	K	9.3	45.1	9.1	
10	45.4	48.2		9.8	47.0	9.7		9.8	8.5	45.6		9.5	28.2	17.2		9.8	55.2	22.1	
9.5	23 10.5	55.3		9.8	58.3	7.3		10	15.4	38.5		9.5	34.5	31.9		9.5	57.8	10.1	
9.0	15.4	44.6		9.2	36 16.9	11.3		10	25.1	14.4		9.4	47.4	41.3	K	9.5	11 38.4	56.0	
10	41.3	29.4		9.0	19.3	33.1		9.3	26.8	35.8		9.0	0 5.1	14.5	Sj	9.8	41.0	21.6	
9.5	43.4	47.3		9.5	46.4	48.3		10	31.0	5.0		8.5	46.3	38.2	K	9.8	44.7	22.1	
10	48.2	18.3		9.7	46.6	25.8		7.3	57.7	24.2	Sj	9.5	52.3	35.4		8.7	48.3	50.7	
9.3	49.5	4.8		9.5	37 14.3	34.5		9.0	50 0.4	46.2	M	9.5	54.2	27.4		6.8	12 12.8	32.2	L
10	57.1	11.6		9.5	28.4	42.9		9.0	17.2	26.9		9.5	59.2	20.3		9.0	19.6	35.7	
10	58.4	40.6		9.5	30.4	47.4		10	49.3	33.1		9.5	1 39.7	20.2		9.3	20.4	14.3	
10	24 15.6	34.1		9.5	38 29.3	39.3		10	49.8	38.0		9.3	40.3	30.0		9.7	28.9	17.9	
10	16.3	13.8		9.5	53.4	42.7		9.4	51 18.3	32.2		9.7	2 0.2	17.9		8.3	46.2	13.3	L
9.0	28.6	29.0		10	39 7.3	29.1		9.5	39.4	43.8		9.0	4.2	22.8		9.0	56.2	0.1	
9.2	34.1	21.9		9.0	20.2	25.1	Sj	9.5	40.4	50.1		8.0	9.2	17.0	Sj	8.2	13 13.0	46.6	K
9.4	40.9	0.5		8.5	42.4	53.5	K	10	44.2	21.5		9.5	15.5	0.6		9.8	21.9	20.4	
10	25 10.9	9.8		9.5	40 22.2	19.1		9.5	54.4	41.1		10	41.4	49.2		10	34.8	49.7	
9.4	13.2	44.2		9.0	28.4	45.9		8.0	52 3.5	54.4	K	8.5	3 13.3	31.0	K	9.5	44.2	7.0	
9.4	17.7	42.9		9.3	37.5	51.3		8.7	42.4	3.6	K	10	20.4	46.2		8.9	58.4	5.1	K
9.5	30.7	45.4		9.5	57.9	0.9		9.5	53 0.2	16.9		9.5	23.5	52.0		9.3	14 5.4	24.4	
9.5	33.2	27.7		8.5	41 2.2	22.8	K	7.0	4.0	7.1	K	8.8	28.5	57.4	K	9.6	22.9	18.0	
9.8	34.0	42.8		7.5	13.2	25.0	K	9.5	14.1	10.2		10	35.5	25.3		9.5	26.5	58.9	
9.5	57.2	17.8		9.5	26.5	58.5		9.3	43.3	28.5		10	39.5	55.0		9.5	39.8	51.5	

1401—1460				1461—1520				1521—1580				1581—1640				1641—1700			
	6h	−8°			6h	−8°			6h	−8°			6h	−8°			6h	−8°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
7.3	14 44.3	10.1	L	9.8	24 45.1	34.6		9.3	34 42.4	23.7		9.1	43 46.4	43.8		8.0	50 16.0	52.7	L
9.1	45.7	57.9	K	5.5	52.4	3.3	K	9.4	51.4	28.4		9.1	49.0	55.6	K	9.5	16.3	34.9	
9.5	49.2	44.7		9.6	54.8	0.2		9.3	55.5	57.6	K	9.1	44 5.9	50.6		9.8	21.5	53.1	
8.0	15 1.8	9.9	Sj	9.1	55.2	20.5		9.4	56.7	54.7	K	9.8	22.5	34.6		9.0	25.6	14.5	
9.0	14.0	59.2	K	9.1	25 3.8	15.1	Sj	9.3	35 2.0	29.7		9.0	34.7	5.8	M	9.2	41.9	10.8	
9.4	34.5	42.5		9.5	14.4	5.1		9.2	18.8	25.3		9.2	36.0	43.2	Sj	9.5	43.2	11.1	
9.5	43.8	34.9		8.5	52.5	46.4		9.5	24.9	38.5		9.4	38.0	17.8		9.3	45.3	42.0	
9.5	45.5	44.9		8.5	55.9	3.4		9.3	35.6	26.0		9.6	38.0	4.2		9.5	51 9.1	17.0	
9.7	46.4	3.8		7.5	26 3.2	51.9	K	9.1	39.3	30.5		10	45 0.2	31.8		9.0	9.8	39.3	
9.7	47.1	53.7		9.4	5.3	20.9		9.5	36 0.1	41.8		9.3	7.3	8.2		7.7	11.0	50.0	L
9.6	52.4	4.8		8.9	13.2	49.4		9.4	5.9	22.2		9.4	9.3	26.7		8.8	30.0	6.3	
9.2	16 7.3	15.5		9.5	15.5	34.6		9.5	9.9	21.0		9.4	19.1	57.5		9.2	38.6	58.0	S
9.6	23.0	0.0		9.4	16.5	49.0		9.5	14.0	16.2		9.3	39.0	54.1		9.5	45.3	44.1	
9.8	37.2	6.0		9.4	27.8	24.0		9.6	41.9	19.8		9.2	49.0	55.3		9.4	52 2.1	13.1	
9.0	17 0.8	8.5		9.0	38.0	4.2		9.1	54.9	27.7		10	49.8	37.7		9.7	10.0	26.8	
8.3	4.5	59.8	K	9.8	38.0	31.8		8.9	54.9	54.7		9.8	51.4	45.4		9.7	11.6	40.6	
9.8	12.6	32.7		9.5	27 5.6	39.0		9.8	37 5.4	41.0		9.7	46 18.9	46.0		8.6	35.1	1.2	L
9.2	15.9	47.2		9.4	11.3	23.4		9.0	5.8	16.7	K	9.8	24.0	38.4		8.3	39.2	11.4	Sj
9.3	20.5	45.6		9.5	34.6	40.9		9.0	18.3	16.9	K	9.5	30.7	45.0		9.0	53 7.6	36.4	
9.4	20.8	40.5		8.8	44.0	30.4	K	9.3	41.9	52.0		9.5	35.7	8.1		9.0	9.1	28.8	
9.2	36.0	3.4	K	9.0	28 1.4	15.2	K	9.5	47.0	31.9		9.3	46.1	1.6		9.9	18.9	43.2	
9.4	49.4	53.2		8.7	3.8	45.8		9.8	59.8	21.9		9.5	49.0	34.6		6.1	25.6	12.1	B
9.7	18 5.1	28.2		9.6	32.6	0.6		9.7	38 41.1	2.3		9.8	57.8	45.6		9.3	30.0	59.1	
8.5	14.3	38.7	Sj	9.1	41.9	22.3	K	9.7	48.5	3.1		8.3	47 8.5	36.2	Sj	8.8	32.5	40.0	
9.4	18.9	51.9		9.2	47.0	16.5		9.5	52.2	53.2		9.5	15.7	19.9		10	36.3	38.4	
9.4	37.6	44.1		8.0	47.2	52.6		9.5	39 4.0	30.1		9.7	22.1	51.5		9.3	38.9	39.9	
9.4	47.2	43.6		9.0	49.4	26.1	K	9.3	26.6	39.0		10	24.1	31.0		6.8	44.1	59.7	Sj
9.1	51.8	43.0		9.8	29 10.9	22.8		9.4	32.1	38.4		10	24.3	56.2		9.3	55.4	23.2	K
9.5	52.0	57.0		8.8	24.6	42.8	L	7.5	36.1	46.1	L	9.7	26.2	33.9		9.1	54 8.6	17.4	
8.3	54.5	20.0	B	9.1	30.7	14.1		9.3	39.0	58.2		8.8	27.4	48.3		8.7	10.0	5.2	L
9.4	19 0.5	57.6		9.3	47.4	27.3		8.5	40 2.0	16.0	K	9.8	31.3	0.2		9.4	13.0	5.3	
9.3	22.6	35.7		9.5	52.5	58.7		9.8	2.1	3.0		9.3	41.5	49.7		8.1	18.6	0.3	L
9.7	29.1	35.5		9.3	52.5	17.8		9.0	9.9	51.5		9.5	42.3	37.1		10	20.2	39.5	
8.8	31.5	40.8		9.8	30 11.4	29.3		9.8	20.3	15.6		9.6	48 1.6	47.9		9.0	21.5	54.1	K
9.5	36.9	47.2		9.4	27.8	14.0		9.6	20.7	8.7		9.2	3.3	41.4	K	9.3	25.6	39.7	
9.4	45.5	25.2		7.0	34.1	7.5	K	9.2	24.9	26.1	K	9.3	4.4	25.3		9.6	50.0	46.3	
9.6	51.4	22.0		9.5	37.4	7.5		8.7	39.3	23.0	K	8.2	9.4	18.7	K	9.4	50.6	40.3	
9.0	20 25.3	51.0		8.5	38.9	23.3	K	5.1	41.5	50.2	K	9.4	12.1	10.6		9.5	52.2	10.4	
8.5	38.3	9.6	Sj	7.5	55.2	40.1	Sj	9.8	45.9	54.7		9.3	19.6	34.5		9.7	54.3	1.8	
9.8	21 23.7	12.1		9.5	56.7	13.0		10	41 17.8	10.4		8.5	22.6	28.0	K	9.7	58.5	5.2	
7.8	39.0	22.6	K	9.7	31 20.4	5.5		9.0	22.7	32.2		9.4	26.1	37.7		9.2	59.8	6.3	Sj
8.8	49.9	57.7		9.1	22.0	2.3		9.0	35.4	23.8		9.5	27.6	42.3		9.5	55 12.3	7.7	
8.3	52.4	23.1	K	9.9	33.0	5.4		9.9	37.2	51.8		9.3	32.5	9.9		9.9	12.7	0.7	
10	59.5	35.7		9.5	33.5	34.4		10	39.5	48.2		9.5	32.7	20.2		9.7	14.2	8.9	
9.3	22 2.9	54.1		9.5	40.1	8.3		8.6	50.1	58.5	K	8.1	33.6	14.1	K	9.7	21.1	59.2	
9.9	13.1	3.7		9.0	54.5	38.8	K	9.1	50.1	2.5		8.8	43.1	46.4		9.8	21.1	17.3	
9.5	13.6	47.7		9.1	55.7	55.0	K	8.5	52.0	9.2		9.1	49 5.2	10.7		10	22.4	8.0	
8.6	17.3	0.7	K	10	32 14.4	56.7		9.2	42 16.1	38.7		8.8	9.7	21.4		10	23.3	10.0	
9.8	28.7	46.3		9.1	43.8	35.4		9.4	27.2	29.7		8.8	13.7	24.8		9.5	33.4	20.0	
10	30.5	5.2		8.7	33 8.3	22.0	M	9.3	28.0	30.8		10	20.0	55.6		9.5	33.8	45.9	
9.4	31.1	33.2		9.0	16.1	14.0		10	34.9	51.0		9.6	21.1	33.3		9.6	33.9	10.6	
9.8	45.4	24.2		9.1	25.9	54.7		8.7	36.3	57.2	K	7.0	37.6	8.7	K	9.3	34.1	1.9	
9.5	47.0	25.5		9.2	28.4	53.8		9.8	51.1	59.0		8.6	45.0	36.6	Sj	9.0	38.4	21.8	
8.7	23 1.3	12.4	Sj	8.7	33.4	50.3	Sj	9.0	58.8	40.1		9.5	46.4	23.5		9.5	38.6	57.9	
9.5	33.7	2.2		8.8	36.6	48.8	M	9.8	43 2.3	17.0		8.8	48.9	49.9		9.3	41.0	9.8	
9.5	36.2	22.9		9.2	42.3	50.5		9.4	12.8	20.3	M	9.2	50.0	52.0		9.5	43.1	6.3	
9.2	43.8	5.8		9.1	46.4	53.0	K	9.0	24.0	29.9	K	9.4	53.2	54.7		9.1	44.5	14.3	
9.8	49.1	2.1		8.5	51.2	39.9		9.3	27.8	3.6		9.8	50 11.1	9.5		9.1	47.8	35.8	K
9.5	24 9.5	44.7		9.8	34 4.2	57.1		9.5	39.4	27.5		8.3	11.8	21.3	L	7.9	48.8	15.0	K
9.8	40.5	9.1		10	9.3	43.7		8.8	43.4	44.9		9.6	15.9	49.6		9.3	49.8	10.0	

1462: roth 1558: rothgelb

1701—1760				1761—1820				1821—1880				1881—1940				1941—2000			
	6h—7h	—8°			7h	—8°			7h	—8°			7h	—8°			7h	—8°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.9	55 51.3	6.3	B	8.3	1 52.2	27.1	S	9.0	8 54.0	39.9		9.8	16 38.9	22.4		9.3	22 48.3	49.0	
10	55.8	15.5		7.2	2 21.8	2.9	K	9.3	54.7	24.9	K	9.8	49.0	51.1		9.9	23 2.4	3.2	
8.9	56.5	5.3		8.8	22.2	58.0		9.6	9 4.0	58.6		9.7	55.5	46.9		9.8	3.2	6.7	
10	59.4	12.9		8.5	23.5	5.4	K	9.2	13.6	16.0		9.4	58.0	52.4		8.0	5.9	13.8	L
9.5	59.6	44.7		10	28.4	41.9		8.7	20.1	36.9		9.3	17 3.7	39.8		9.0	15.1	45.4	K
8.4	56 0.0	8.2	B	9.4	30.5	55.4		9.5	27.1	11.9		9.8	7.4	17.3		9.4	24.9	13.5	
9.7	0.8	13.7		10	41.5	48.3		9.8	59.9	57.6		9.8	8.2	10.1		9.8	30.8	33.9	
9.4	2.1	10.5		8.9	53.3	56.6		8.3	10 1.6	28.6	L	10	9.1	36.2		7.9	39.1	45.6	K
10	14.0	6.0		8.7	54.4	5.8	K	9.5	17.9	21.2		9.8	10.0	23.8		9.5	44.7	4.2	
10	14.6	4.2		9.5	59.6	54.3		9.0	22.2	47.6		9.8	10.6	8.0		8.9	46.6	44.8	K
9.0	17.5	17.7		9.8	3 2.4	22.9		9.7	11 13.3	51.8		9.9	16.2	46.4		9.8	24 3.9	14.6	
9.9	18.3	4.6		9.8	13.3	52.8		8.9	17.9	8.2	K	9.7	16.7	32.6		9.4	4.8	29.9	
9.5	20.1	17.3		9.5	15.7	29.6		9.5	28.0	28.8		9.2	17.4	36.5	K	9.6	5.9	23.1	
9.0	30.2	15.1		9.5	17.2	39.7		9.2	31.7	16.0	K	9.8	30.5	16.6		9.2	23.6	46.7	
9.4	31.8	41.9		9.4	17.6	13.2		9.7	39.3	39.3		9.6	44.7	51.7		7.8	25.3	26.0	K
9.8	33.8	14.0		9.4	33.6	52.1		7.5	44.3	52.1	K	9.0	49.8	55.4		9.4	26.4	51.2	
9.2	35.5	11.8		9.8	40.4	11.8		9.5	48.5	9.7		9.1	49.8	56.0		9.0	37.3	39.2	K
9.3	37.1	58.7		9.6	40.5	41.5		9.7	12 5.5	52.4		8.9	51.4	9.3	K	9.5	46.9	15.3	K
9.5	40.8	12.9		7.4	4 17.6	53.4	K	7.5	25.0	31.3	K	9.8	18 2.4	18.0		9.0	48.7	24.2	K
9.8	48.0	19.5		9.4	28.4	48.6		10	31.3	1.9		9.7	2.9	0.8		9.4	55.6	0.3	
9.8	48.7	20.6		9.6	31.0	58.6		9.8	41.2	19.9		9.6	14.4	4.0		9.0	59.1	22.9	
9.4	50.9	3.1		9.7	44.1	58.6		9.8	46.3	3.2		10	15.1	4.5		9.0	25 0.3	0.5	
9.8	54.3	57.1		9.5	53.2	27.2		8.5	51.8	55.9	K	9.9	18.6	36.0		9.4	2.1	36.8	
10	58.6	59.1		9.8	53.4	7.0		9.8	52.9	37.5		9.6	18.6	33.8		6.0	8.4	33.8	K
8.4	57 26.6	53.7	K	9.1	5 1.1	54.1	K	9.8	13 11.5	16.6		9.8	37.4	47.4		10	10.6	34.3	
7.0	35.9	13.8	L	9.0	2.7	22.9	K	9.4	12.5	24.7		9.8	57.4	17.5		9.6	11.1	30.0	
9.5	40.2	4.1		9.2	3.5	8.6		9.1	17.5	9.8		9.8	57.9	14.0		9.7	11.7	58.6	
9.5	41.8	50.3		9.6	10.1	37.4		9.1	18.2	24.1	K	9.1	19 0.3	19.6		9.8	16.9	12.5	
8.0	43.7	37.8	L	9.4	15.7	35.2		7.3	21.0	16.8	K	8.2	10.5	48.7	✓Sj	9.8	31.7	13.5	
8.9	53.0	3.9		8.7	16.6	31.0		8.5	26.2	4.7	L	9.5	11.6	21.4		9.2	55.1	44.6	
9.7	58.4	50.0		10	20.9	44.2		9.8	29.4	9.8		9.1	14.9	6.4		9.0	59.6	44.5	
9.0	58 1.1	14.0		9.1	24.6	33.9		10	32.8	1.3		9.1	21.4	24.0		9.5	26 13.8	4.7	
9.0	29.3	47.9		9.7	31.3	41.9		9.2	40.8	45.0		9.5	29.3	38.5		9.0	36.2	3.2	
7.9	38.7	30.2	K	8.3	34.1	27.9	K	9.2	42.3	42.6		9.3	32.1	42.2		9.8	48.8	20.0	
9.4	39.6	2.7		9.2	34.9	16.2		9.0	43.1	22.6		9.9	36.8	21.8		9.0	49.7	32.6	
9.8	41.5	1.8		9.4	43.2	33.2		8.2	44.9	9.8	✓K	10	48.0	22.5		9.8	53.7	57.9	
8.4	53.9	35.2	K	9.9	47.9	2.0		9.7	14 0.5	41.8		8.6	51.4	14.1		9.1	57.9	56.9	
9.8	59.0	52.0		9.6	48.3	31.1		8.2	5.0	52.1	K	9.8	20 12.2	31.3		9.3	58.4	56.2	
8.8	59 4.7	20.9	K	10	6 11.1	4.8		9.7	5.9	3.3		9.0	13.1	33.8		9.8	27 24.5	47.7	
9.5	15.6	13.7		9.9	14.6	0.7		9.2	12.0	37.2		9.4	30.9	22.6	—	9.8	27.4	9.8	
9.8	18.0	46.1		9.8	15.9	6.3		9.8	17.7	59.4		9.8	48.9	16.1		9.5	30.6	5.2	
9.7	21.7	3.6		7.5	23.8	37.3	Sj	6.5	19.4	36.1	L	9.4	58.5	55.4		9.8	30.9	37.3	
9.2	27.7	57.4		9.7	32.3	45.6		9.8	22.9	54.4		9.8	21 1.9	4.5		9.8	31.2	14.3	
9.0	32.7	50.4	K	9.4	36.6	20.0		9.5	24.5	24.2		9.8	5.4	15.2		9.1	34.4	21.7	K
9.8	32.8	6.4		7.8	45.3	41.0	K	9.4	26.1	35.6		8.5	13.4	10.4	Sj	9.3	44.8	5.4	
9.8	45.7	38.5		9.8	45.9	20.4		9.7	40.4	7.9		9.5	18.8	36.1		9.5	28 2.1	5.8	
9.6	0 3.2	51.0		9.7	7 6.1	4.1		9.1	42.7	47.4		9.0	25.6	57.3	K	9.1	4.1	44.2	K
9.0	14.7	53.6		9.8	7.1	48.6		9.6	43.4	45.5		9.4	31.6	39.3		9.3	6.1	48.3	
8.8	18.7	26.8	K	9.5	9.2	10.6		9.6	55.2	41.6		9.5	33.9	27.5		9.2	9.4	47.1	
9.8	19.1	53.8		9.0	12.6	10.8		9.7	59.6	57.1		9.3	36.8	40.4		9.5	40.5	58.7	
9.0	34.6	54.5	K	9.8	26.5	46.0		9.5	15 2.0	8.1		9.1	47.0	54.0		8.0	49.3	1.7	L
9.8	36.6	28.2		9.5	36.1	8.3		6.6	5.5	42.5	✓Sj	9.8	22 2.4	28.2		9.3	58.6	19.3	
8.8	41.8	50.9		8.8	42.9	40.0	M	9.7	13.5	54.4		9.8	13.9	7.0		7.8	29 3.0	59.4	K
9.4	48.5	46.3		9.3	43.9	32.5		9.0	30.3	45.9		9.5	23.8	39.3		9.3	17.2	41.3	
10	1 5.0	8.4		9.1	46.3	1.5		8.3	42.5	45.9	L	9.9	30.9	6.9		9.0	32.3	6.7	K
9.7	9.0	4.9		9.5	47.9	10.8		9.7	16 2.2	47.5		9.5	33.8	10.9		9.1	48.9	42.4	
9.5	26.6	7.1		9.4	52.6	36.5	M	9.3	16.0	51.7		8.0	39.0	57.8	K	8.9	57.3	26.5	K
8.5	28.3	52.9	K	9.2	57.7	48.9	K	10	19.9	15.2		9.0	40.4	37.5	K	9.8	30 8.0	54.1	
9.0	48.7	8.3	K	9.7	8 20.8	54.3		9.5	21.9	33.7		9.7	44.1	4.3		9.8	13.7	10.6	
10	49.3	14.6		9.0	25.8	4.7		8.9	32.1	44.1	Sj	10	48.0	46.9		9.4	26.4	39.4	

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	7h	—8°			7h	—8°			7h	—8°			7h—8h	—8°			8h	—8°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.8	30 32.3	56.1		9.5	39 22.7	18.7		9.3	45 45.9	13.4		9.3	53 54.1	23.2		9.2	1 59.1	0.4	
8.8	40.3	5.5		9.3	37.3	52.0		9.8	46.5	30.4		9.0	54 0.7	30.2	M	9.3	2 4.1	40.6	
8.8	42.2	22.1	K	8.0	50.7	28.0	K	9.0	48.0	54.3	K	9.4	7.2	47.8		9.0	7.3	29.8	
9.6	46.3	42.1		9.0	54.2	29.2	K	9.5	46 10.0	42.7		9.7	31.0	47.2		9.2	16.0	49.5	K
8.6	48.8	53.9		9.8	58.8	49.7		9.3	10.2	2.2		9.0	34.7	53.0	K	9.4	22.8	49.3	
9.1	54.4	22.8	K	9.7	40 5.7	12.6		9.8	16.3	4.6		7.2	43.8	11.9	K	9.5	25.6	18.7	
9.1	54.8	0.4		9.8	7.4	41.6		9.6	38.2	53.7		9.4	57.6	27.5		9.5	27.4	36.2	
8.7	31 19.0	0.8	K	9.5	8.8	12.6		8.3	42.9	51.1	Sj	9.5	55 0.3	54.4		9.5	41.9	36.3	
9.4	22.8	6.2		9.7	11.3	34.9		9.5	49.6	27.8		7.0	2.8	57.8	K	10	44.0	38.3	
9.4	37.8	55.7		9.1	29.7	37.8	K	7.8	59.7	56.6	Sj	9.5	22.9	19.0		9.2	50.5	46.7	
9.7	38.1	40.2		9.4	33.2	36.8	K	9.5	47 16.0	22.4		9.5	36.2	30.0		9.5	3 27.3	10.8	
9.8	41.5	57.0		9.5	35.5	3.9		9.6	16.2	24.8		9.9	39.3	30.2		9.1	41.6	18.2	
9.7	42.3	52.0		9.8	53.3	17.3		9.0	30.8	36.7		9.3	39.6	40.1		9.5	52.5	16.4	
9.8	32 0.2	47.2		9.6	59.7	0.0		9.4	43.7	14.7		9.5	44.4	38.8		8.8	4 0.0	56.6	
8.5	19.2	21.1		8.7	41 0.5	25.8	M	9.5	48 6.4	7.0		9.3	46.1	43.8		9.0	7.8	15.9	
9.4	25.6	52.4		9.3	0.9	59.1		9.6	7.8	44.4		9.2	50.0	42.0		8.9	10.6	13.2	
9.2	29.6	46.0		9.7	12.8	52.6		9.1	15.2	50.7		9.4	56 5.7	42.5		9.3	24.4	40.0	
9.8	47.3	39.4		9.8	26.5	39.4		10	15.7	46.9		9.5	15.8	36.0		9.2	25.3	30.9	
9.5	33 6.2	33.1		9.3	31.7	4.3		9.5	21.0	44.2		9.0	36.2	52.2		8.3	36.9	56.5	K
9.7	11.0	41.9		9.2	35.8	52.1		9.7	44.8	52.9		9.7	38.6	2.9		9.5	38.0	45.8	
9.2	13.7	45.8		9.5	36.4	19.7		9.3	49 6.7	12.6		10	57.1	48.6		9.5	39.8	1.2	
10	15.0	36.6		9.6	42.7	34.7		9.5	21.1	41.2		9.6	57 3.9	52.6		9.4	42.1	50.0	
9.9	16.5	34.2		9.8	49.8	11.9		9.8	26.9	49.3		9.6	8.4	40.7		7.9	5 11.1	6.2	L
9.8	37.4	40.0		9.5	42 2.9	54.7		9.8	48.5	14.6		9.5	8.9	55.7		9.8	19.7	26.7	
9.8	53.3	19.6		9.3	6.7	18.8		9.8	54.2	55.5		10	19.7	52.8		9.3	30.8	28.2	
8.5	57.9	2.4	K	9.5	15.3	52.8		10	58.3	47.5		10	33.9	45.8		9.5	46.2	0.6	
9.4	34 15.1	1.4		9.3	26.7	42.3		9.5	50 3.1	28.3		9.0	42.7	56.9		9.7	51.3	31.1	
9.5	15.6	34.0		9.5	34.7	47.5		9.0	24.6	8.7		8.8	50.7	4.9	K	9.7	6 0.5	35.0	
9.0	19.3	45.1		9.4	35.0	27.0		9.6	33.3	2.0		9.5	52.3	47.5		9.7	13.4	38.7	
8.2	27.3	53.0	K	8.1	51.2	13.2		9.5	47.6	46.9		9.5	52.8	34.7		9.6	25.2	47.6	
9.3	34.5	4.9		9.1	56.5	6.4		9.0	49.9	27.2		9.0	59.0	41.0		9.4	7 1.6	3.8	
9.3	45.7	11.4		8.3	43 1.1	55.2	L	10	54.7	18.9		7.9	58 2.7	29.0	L	7.8	6.2	25.3	L
9.5	49.8	17.0		9.0	1.2	22.2		9.4	56.5	2.4		9.3	9.3	28.5		9.5	9.7	27.8	
9.1	52.3	22.4	K	9.4	2.3	15.7		9.0	58.0	21.5	M	9.0	18.8	16.0		9.5	33.0	18.8	
9.9	35 10.0	5.2		9.8	12.4	44.1		9.5	51 20.1	25.2		8.2	37.9	2.1	K	9.0	35.9	9.8	
9.4	18.4	59.6		5.5	13.1	49.0	Sj	9.2	29.8	12.6		9.0	53.2	55.2		9.3	36.1	27.9	
9.5	30.0	6.2		9.7	14.9	12.0		9.8	34.2	55.1		9.4	59 6.6	52.1		9.2	8 10.3	35.2	
9.4	45.3	15.8		10	20.2	11.9		9.4	39.9	59.0		9.0	9.3	5.0	Sj	8.9	13.9	5.0	
9.5	49.3	32.6		9.7	33.3	0.9		9.4	52.8	16.7		9.4	11.0	54.3		9.7	14.8	2.6	
9.3	58.5	9.7		8.9	52.9	8.4		9.0	54.7	34.4		9.3	21.4	20.2		9.4	24.4	29.1	
9.8	36 12.7	16.4		9.1	54.2	2.0		9.3	56.9	17.6		8.5	27.6	49.4	M	8.7	57.5	37.2	
9.8	14.2	13.5		9.8	56.6	35.7		9.1	58.6	47.0		6.0	28.9	49.9	S	9.4	58.4	25.9	
9.8	15.7	46.8		9.1	44 3.2	26.0	M	9.2	52 2.7	34.4		9.5	35.0	36.0		8.5	9 20.4	31.4	
9.5	55.6	56.4		10	7.0	0.1		8.5	7.9	9.6	L	9.4	45.0	5.1		9.5	22.9	31.0	
9.8	58.1	4.9		9.9	8.8	44.5		9.8	15.1	26.5		9.6	46.4	0.5		8.8	28.2	36.3	
9.4	37 18.4	54.7		10	22.9	35.9		9.2	19.4	1.0	K	9.1	46.4	10.0	K	9.5	30.6	37.5	
9.5	18.8	21.9		10	35.7	31.0		9.7	21.7	49.4		9.7	54.0	49.8		9.3	31.5	9.5	
9.8	45.0	21.7		9.6	47.2	0.0		9.1	29.7	11.1		9.2	0 8.7	0.9	K	9.5	37.4	52.1	
8.5	45.8	3.1	L	9.8	47.6	1.6		9.8	35.3	2.2		9.8	10.3	13.3		8.9	40.9	6.3	
9.5	50.8	8.0		8.3	50.3	55.8	L	7.9	47.4	42.6	L	8.8	25.3	36.3		7.7	43.3	36.5	L
9.1	38 5.3	56.9		9.8	54.7	21.7		9.7	53.3	58.3		9.8	34.6	50.8		7.0	47.2	33.7	L
9.0	15.2	40.2		8.6	57.6	50.1	L	10	53 3.6	57.2		8.2	36.0	9.5	Sj	9.1	52.0	31.1	
9.3	18.9	57.8		9.0	45 11.0	23.8	K	9.4	4.9	55.7		10	53.6	43.2		9.5	10 9.1	22.9	
9.0	21.3	11.4		9.3	24.2	6.8		9.3	7.7	33.8		9.4	1 3.4	5.9		9.1	16.0	53.6	
8.5	23.7	29.9	L	9.6	37.3	10.9		8.6	25.4	42.5	L	8.4	8.8	19.1	K	9.9	16.9	49.7	
9.4	23.8	36.3		9.3	39.5	1.2		9.0	26.6	58.6		9.3	12.0	5.1	M	8.3	24.3	39.2	L
9.4	28.0	36.2		9.5	40.1	50.7		10	27.6	13.6		9.5	17.8	38.5		9.5	48.0	56.4	
9.2	35.2	28.4		9.8	40.3	45.8		9.8	33.9	19.0		9.1	20.8	31.9		9.3	54.9	56.2	
8.8	39 0.6	6.7	K	9.6	42.9	32.7		9.3	45.9	48.4		9.6	28.2	22.7		9.6	11 9.1	18.7	
9.3	7.8	10.3		9.7	43.8	26.3		9.8	53.2	50.0		9.5	44.1	49.8		9.4	9.7	23.0	

2301—2360				2361—2420				2421—2480				2481—2540				2541—2600			
8h		—8°		8h		—8°		8h		—8°		8h		—8°		8h—9h		—8°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.5	11	25.5	59.1	9.8	20	1.1	4.8	9.4	28	23.5	45.5	9.5	38	58.7	2.1	8.9	51	44.5	6.4 K
9.0		40.9	24.3	8.3		1.9	56.1 K	9.5		42.8	48.6	8.4	39	2.9	26.8	9.6	52	9.8	31.1
9.8	12	16.8	38.6	9.4		11.8	40.0	10	29	4.9	38.4	9.1		13.9	57.9	7.8		15.7	26.0 L
9.5		18.0	36.3	9.4		15.6	33.1	10		10.0	42.6	9.3		27.7	12.1	9.4		19.9	43.1
8.8		28.1	5.3	9.5		24.6	32.2	9.4		36.2	48.4	9.8		29.9	50.0	8.6		24.8	1.5 K
9.1		31.9	8.9	9.0		32.8	4.2	9.8		51.3	42.0	7.5		30.2	7.4 K	8.7		38.9	40.0 Sj
9.1		43.8	28.1	8.9		37.3	9.7	8.6	30	4.3	35.5 K	9.5		50.2	10.5	9.0		53.3	3.6 M
9.7		44.6	25.0	10		37.4	18.5	9.2		6.8	11.2 K	9.7	40	10.9	31.3	9.3	53	6.9	2.3
9.5		47.2	55.7	9.0		46.1	41.6	9.4		13.4	8.3	9.8		18.1	50.0	7.5		16.2	33.4 K
9.8	13	0.6	50.2	9.2		49.4	58.8	9.0		31.5	35.1	10		23.0	53.9	10		39.9	12.8
8.9		10.0	17.0	9.4		56.9	39.5	9.6		39.5	9.2	9.7		37.4	41.8	7.0		41.8	38.0 K
9.5		18.5	42.5	9.3	21	11.6	31.9	10		45.4	59.4	8.5	41	16.3	59.7 M	9.0		45.7	40.6
9.5		39.1	30.1	8.8		12.2	14.7	9.5		46.6	23.1	9.4		18.5	0.8	9.3		54.2	58.9
9.3		54.9	55.2	6.5		17.5	19.9 L	8.0		54.9	13.8 K	8.5		42.1	9.8	7.5		58.4	39.3 K
7.5	14	3.1	25.4	9.2		18.1	2.6	9.5		55.4	59.7	9.3		44.4	59.4	9.2		59.8	36.0
9.5		3.8	27.1	9.3		21.2	19.1	7.0		56.2	22.9 K	9.8		51.9	40.4	10	54	3.4	1.7
9.6		7.2	29.6	9.5		33.4	59.2	9.2	31	11.9	45.5	9.8		59.8	9.4	9.4		4.2	6.5
9.6		20.1	14.3	9.8	22	2.0	16.2	8.8		15.1	3.8	9.0	42	8.2	17.8 M	10		34.0	21.1
6.8		33.3	13.2 K	9.2		5.4	2.4	8.9		20.2	42.9 K	8.0		30.8	4.7 Sj	9.4		35.5	27.0
9.5		41.7	46.5	9.2		6.1	53.6	8.5		48.0	2.8	6.8		36.6	6.2 Sj	9.7		42.7	29.0
9.5		53.6	1.8	8.5		11.2	32.4 Sj	9.7		51.5	48.2	7.7	44	3.3	53.2 Sj	8.9		47.6	52.5
9.5	15	11.7	35.5	9.1		15.1	40.9	9.5	32	12.9	58.1	9.5		7.8	31.5	9.7		54.8	40.5
8.2		15.9	40.0 K	10		31.8	22.5	9.5		28.3	49.5	8.9		12.3	25.0	9.5	55	0.7	52.3
9.7		22.0	18.3	9.4		32.5	42.8	8.0		39.0	41.5 K	7.5		16.9	35.2 K	8.4		38.4	24.3 K
9.5		25.4	47.4	8.8		46.3	12.1	9.8		46.6	23.6	9.5		18.7	22.6	8.7		41.3	49.5 Sj
9.1		28.7	14.7	10	23	15.9	19.9	10		54.7	5.9	9.4		26.2	12.5	9.4		49.4	3.7
9.7		34.0	41.0	9.5		41.3	8.6	9.1	33	28.8	12.4	9.0		29.3	34.2 K	9.7	56	3.5	14.5
8.5		51.1	7.5 L	9.3		43.2	47.1	10		34.1	46.6	9.0		36.3	25.7	7.8		4.2	25.3 K
9.3		52.6	1.8	9.5		46.2	34.2	9.5		38.2	5.5	8.2		40.8	35.1 K	8.6		18.7	27.0 K
9.3		53.3	45.4	9.3		59.1	33.3	9.1		39.4	47.4	9.5	45	33.8	56.4	8.5		38.7	0.7 K
9.1		54.1	56.5 K	8.0	24	13.3	57.9	9.7		44.9	47.0	9.7	46	0.0	48.6	9.2		45.5	7.8
9.0		54.1	0.6	9.7		14.2	46.7	6.5		59.9	32.2 L	9.2		4.1	56.3	9.4	57	5.3	33.0
9.3		55.9	47.1 K	8.7		28.2	50.7 Sj	9.4	34	4.5	44.7	10		32.0	56.3	8.9		9.0	48.2 M
9.1		59.1	35.9	7.3		43.7	22.2 K	8.3		7.4	20.6 L	9.7		32.1	52.9	9.2	58	19.6	49.5
9.1	16	25.5	4.0	9.8		52.9	29.0	9.5		31.0	39.4	9.4		40.2	50.7	9.6		21.3	43.9
9.2		26.0	39.8	9.5		54.7	35.4	7.5		45.7	2.6 L	9.0		41.0	23.8	9.7		37.9	43.6
9.1		35.0	21.8	9.5		58.6	0.9	9.3		53.0	39.7	9.0		47.2	53.2	8.3		51.6	31.8 K
9.0		45.8	29.5	9.3	25	21.1	39.7	9.5	35	8.5	42.0	7.0	47	10.7	12.8 Sj	9.0		59.3	50.0 M
8.4		46.7	0.3 L	9.6		23.0	35.0	7.8		10.7	4.3 L	9.3		15.4	29.9	9.1	59	0.4	3.7
9.3		54.5	41.0	9.8		36.5	32.0	9.5		12.6	17.0	8.3		19.9	40.0	9.0		20.0	13.1
8.5	17	0.0	22.3 K	9.5		40.5	33.6	9.1		12.8	18.8	9.7		27.5	3.0	9.4		33.2	38.7
9.3		8.6	47.2	9.1	26	0.6	41.4 K	9.1		25.9	1.7	9.5		33.1	48.8	9.0		42.4	14.2 K
7.4		26.0	3.2 L	9.5		1.0	44.9	9.8		29.0	0.5	9.1		35.2	14.0 M	9.1		50.1	47.7
9.5		26.5	58.3	9.4		7.8	45.0	8.8		50.4	54.6	9.1		40.3	22.2	9.8	0	29.0	47.8
8.1		36.5	27.6 K	9.5		31.8	7.2	8.5		54.0	0.8 L	var	48	36.4	35.5 B	9.8	1	6.7	43.1
9.5		54.0	13.5	9.4		36.7	37.8	9.8	36	6.1	43.4	9.3		39.2	16.3	9.8		15.1	23.0
9.1		59.9	53.7	9.8		44.3	10.1	9.5		15.9	27.5	10		42.6	32.7	9.0		22.0	19.0
9.4	18	3.3	7.1	9.7		46.2	40.1	9.3		31.0	37.8	9.1		51.8	51.0	5.8		36.2	0.3 Sj
9.8		12.0	7.8	9.7		50.1	41.4	9.3		43.9	45.4	9.6	49	14.5	48.9	7.9		36.9	48.2 K
9.3		15.3	3.5	9.7	27	4.2	39.8	9.5	37	2.3	3.3	10		21.0	43.5	9.2		52.1	54.8
9.5		28.7	38.5	9.9		5.2	28.0	8.8		6.3	51.8 K	9.2		23.7	2.7	9.5	2	20.7	41.2
6.3		36.6	28.9 K	9.1		10.0	28.9	9.4		11.6	21.3	8.8		42.8	30.7	8.4		29.6	2.4 K
7.8		53.5	18.5 K	9.5		39.0	57.9	9.6		25.8	49.5	9.0	50	10.8	55.5	5.3		30.2	12.0 K
9.8	19	2.0	12.8	9.7		47.7	4.5	8.6		34.9	55.1 K	9.0		15.8	54.5 M	9.4		51.1	11.4
7.0		3.6	2.2 K	8.6		50.6	50.4 K	9.1		50.5	44.5	9.3		18.5	42.4	9.3		58.1	11.6
8.6		10.9	43.9	9.7		57.4	5.8	9.8	38	11.8	24.5	8.5		22.9	51.4 K	9.6	3	5.8	50.6
9.3		34.0	20.6	9.2		57.6	54.5	9.5		14.9	57.3	9.3		32.3	33.3	9.3		7.8	28.6
9.4		39.5	45.2	9.0	28	1.1	13.0 K	9.5		20.5	40.1	8.6		35.7	12.8 M	8.5		8.6	2.6 K
9.1		56.9	16.4	9.5		17.0	13.0	9.5		35.3	16.3	9.2	51	1.8	59.6	10		13.8	39.3
9.4		58.6	42.1	9.0		21.8	17.8	9.0		54.9	55.6	9.2		18.2	26.4	8.5		41.6	18.4 K

2601—2660				2661—2720				2721—2780				2781—2840				2841—2900			
	9h	—8°			9h	—8°			9h	—8°			9h	—8°			9h—10h	—8°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.0	4 10.1	18.7	K	9.5	16 17.7	8.5		9.0	29 42.7	48.2	K	9.8	44 4.2	30.0		8.8	57 32.2	10.6	
9.4	13.0	10.0		9.7	22.3	6.6		9.3	30 10.2	19.9		9.8	19.3	59.5		9.5	49.8	14.6	
9.8	19.3	41.4		9.0	50.2	26.4	M	9.8	18.2	13.4		9.5	27.0	18.5		8.2	58 19.0	50.5	Sj
9.8	19.3	21.1		9.3	17 9.1	26.3		9.5	18.8	36.2		9.1	38.5	14.9		9.6	59 3.1	48.5	
9.6	26.3	18.7		9.0	16.2	49.8		6.0	45.0	46.5	K	10	55.1	23.4		9.7	14.5	42.1	
10	5 8.9	27.4		8.8	19.9	47.6	M	9.1	50.5	7.6		9.5	59.2	0.7		9.1	14.7	13.7	
10	9.2	37.0		9.8	36.5	54.1		9.8	31 12.1	45.1		9.4	45 2.4	15.4	Sj	9.8	36.0	51.7	
8.7	38.4	20.5	Sj	9.1	18 6.3	27.0	K	9.5	41.2	18.5		7.8	18.7	32.6	K	8.8	55.5	47.3	M
10	47.1	58.0		8.9	8.4	29.3	K	9.7	32 18.6	9.6		9.5	21.7	29.2		10	0 7.8	22.3	
8.3	53.6	6.2	K	9.4	9.0	37.7		9.3	24.6	43.1		9.0	23.0	42.1		9.4	9.0	32.8	
9.8	6 15.9	3.2		9.4	31.5	0.4		9.5	27.0	52.3		9.8	44.8	2.5		8.9	19.6	37.9	K
9.3	16.2	31.2		9.3	38.5	41.3		9.5	57.0	40.8		8.9	46 56.0	1.6	K	9.2	20.5	35.7	
9.5	7 22.5	30.3		10	41.3	28.8		7.5	33 0.1	26.0	K	9.1	47 54.8	52.3		9.2	32.9	22.9	
9.2	26.8	32.4		9.4	19 22.0	45.1		9.3	15.2	39.4		9.1	48 0.9	11.0		8.9	37.0	34.6	K
7.5	47.1	9.7	Sj	10	45.9	50.2		8.7	23.0	7.5	K	8.7	13.8	59.0	K	9.9	1 8.6	40.0	
9.5	47.8	46.8		9.4	48.5	34.8		9.3	24.8	21.8	M	9.4	28.5	42.8		9.1	12.0	19.3	
9.9	8 2.2	26.3		9.4	58.2	20.0		9.5	48.3	22.1		7.0	34.8	8.8	Sj	9.4	43.1	35.1	
8.0	14.8	27.8	Sj	6.8	20 8.5	35.9	L	9.1	34 3.9	52.5	K	8.8	46.6	28.2	K	9.7	58.5	12.8	
7.8	26.9	8.7	K	9.8	22.9	46.4		9.1	4.9	56.1		9.5	52.0	21.5		8.9	2 11.4	0.9	Sj
9.5	28.4	16.2		2	27.1	1.7	K	9.8	31.2	18.4		9.5	49 1.2	8.2		9.0	13.5	47.3	
9.4	50.8	2.3		9.4	30.9	5.9		9.8	52.1	13.2		9.1	16.6	31.5		9.9	32.7	43.6	
8.8	9 10.2	28.7		9.4	41.9	25.6		8.8	35 48.5	28.7	M	8.4	31.0	9.0	M	8.8	3 8.6	0.0	K
6.2	35.2	8.5	Sj	9.1	49.3	20.5	M	9.1	36 0.1	17.1		8.5	31.9	33.4	K	8.7	8.8	20.8	M
9.1	58.2	45.1		9.4	21 7.6	8.8		10	6.0	52.8		9.6	35.4	0.4		9.4	29.0	57.5	
9.1	59.1	37.9	M	10	18.5	42.5		9.5	12.6	13.3		7.8	52.4	54.1	K	9.4	57.2	12.5	M
9.6	10 12.4	35.7		8.0	18.6	33.8	K	10	13.8	52.7		9.9	55.7	4.9		8.3	4 6.1	41.3	K
9.4	50.1	31.3		8.9	25.8	46.7	K	9.5	16.9	3.7		8.4	55.7	41.3	K	9.5	18.0	27.2	
9.3	55.2	29.5		9.4	36.7	6.5		9.3	21.5	48.7		9.5	50 2.3	12.4		9.4	24.6	18.5	
8.9	11 9.9	52.0	Sj	9.8	43.7	38.4		9.0	24.4	47.9	M	9.5	7.6	44.5		9.7	37.4	8.2	
9.8	13.0	54.5		9.5	22 1.3	31.8		9.8	30.3	24.4		9.5	51 6.9	15.0		9.4	49.8	41.5	
8.2	15.8	16.5	K	9.3	18.0	39.4		9.5	40.5	38.7		9.2	40.7	5.5		9.2	5 24.1	10.7	
9.3	19.7	52.9		9.5	18.4	16.1		9.2	53.3	16.3		9.2	47.1	36.1		9.8	28.3	40.5	
9.3	21.7	44.2		9.5	22.1	7.5		9.6	37 0.6	59.2		9.2	52 2.7	29.4		8.7	33.7	39.4	M
9.5	42.0	23.0		9.3	24 21.2	15.5		9.1	6.2	8.1		9.2	10.1	31.0		9.4	56.7	15.0	
10	57.3	26.1		9.5	31.8	36.6		9.8	13.7	4.2		9.7	11.3	6.2		9.6	6 4.3	18.8	
10	57.7	22.5		9.1	33.6	5.3		9.5	35.8	48.5		9.8	46.1	54.7		9.8	25.9	45.5	
9.5	12 9.8	41.7		9.3	44.2	18.4		9.5	38 4.9	39.4		9.5	47.3	28.5		10	7 4.7	59.3	
8.6	15.9	50.6	K	9.1	51.0	31.2		8.9	28.8	34.1		9.6	56.8	29.6		9.7	24.2	47.9	
9.1	21.4	22.8		9.5	54.5	46.9		9.8	39 0.9	59.5		9.8	53 0.1	52.5		8.3	44.4	1.2	K
9.4	27.1	4.9		9.0	25 4.0	6.9	K	8.9	11.9	37.0		9.8	23.4	13.3		9.8	45.7	18.4	
9.6	48.5	42.8		9.3	54.3	5.1		9.3	32.6	36.7		8.3	24.0	55.0	K	9.8	49.6	55.1	
9.5	13 9.5	34.4		9.0	26 1.2	40.4	K	9.8	46.8	58.0		9.5	36.7	42.3		9.8	57.6	53.9	
5.0	24.3	56.4	K	10	18.3	18.0		8.8	40 6.5	31.1		9.1	41.6	49.6	M	9.8	8 31.1	11.7	
8.5	25.9	10.6	K	9.8	34.7	11.9		9.1	21.8	41.7		9.7	44.3	27.7		10	54.2	17.5	
9.7	40.9	7.5		9.8	34.9	56.4		9.8	48.9	4.3		9.4	54 29.4	40.1		9.1	9 16.0	12.4	
9.5	50.4	31.5		9.8	51.6	50.4		9.5	53.7	41.0		9.7	55 12.4	56.2		10	20.3	56.1	
8.9	14 31.0	23.5	Sj	9.4	52.5	30.5		9.4	57.8	49.5		9.9	19.0	44.6		9.0	43.1	10.8	
9.8	32.4	31.2		9.7	58.8	10.5		9.5	41 27.7	48.2		9.4	20.0	32.5		8.7	49.2	18.9	K
9.0	34.6	3.0		10	27 2.5	1.8		9.1	34.2	34.4		9.9	25.9	56.6		9.3	10 17.1	45.3	
10	40.5	38.9		10	20.6	14.9		9.2	43.2	34.4		9.2	27.1	5.6		9.0	21.9	59.0	
9.4	52.3	38.8		9.4	29.1	38.4		7.0	42 8.3	9.6	Sj	9.8	41.8	18.6		9.5	31.3	23.8	
9.8	15 8.5	43.3		9.3	57.1	8.0		9.1	11.6	23.6	K	9.3	55.1	32.7		9.1	55.6	17.6	K
9.6	10.9	30.3		9.2	28 10.2	58.8		8.6	21.7	31.1	K	8.0	56.0	11.0	K	9.5	11 9.3	56.5	
9.8	27.0	22.3		10	14.7	18.4		9.1	39.0	41.4	M	8.4	56 0.4	51.2	L	9.7	10.5	39.5	
9.1	32.3	46.6		10	25.7	44.4		9.3	43.5	17.4		9.1	13.5	2.9		8.0	58.5	36.4	K
9.4	39.2	2.5		10	30.6	45.5		9.8	48.4	42.5		6.3	31.0	52.4	L	9.4	12 25.5	22.1	
9.5	55.3	35.7		9.6	34.6	11.4		9.8	49.8	49.0		9.4	56.6	0.9		6.3	47.9	19.3	Sj
9.8	16 3.7	0.0		9.5	54.7	13.8		9.3	43 1.7	47.3		8.5	57 9.0	27.8	K	10	54.8	24.5	
9.8	14.1	23.4		9.1	29 21.3	53.7		9.5	21.3	4.9		9.3	15.9	48.4		8.5	13 41.4	16.4	L
9.6	15.2	11.2		9.8	23.0	42.3		9.8	51.7	54.9		9.6	25.3	14.9		9.7	54.1	57.0	

2901—2960

m	10h m s	−8° ′	
9.6	13 56.1	57.5	
9.8	14 52.1	15.4	
9.8	55.2	18.5	
9.0	15 12.0	11.0	K
9.8	13.2	24.4	
7.0	30.0	40.0	Sj
9.0	58.6	57.5	K
9.9	16 3.6	27.1	
9.3	24.6	4.9	
9.6	47.1	43.0	
9.8	17 17.9	33.1	
10	54.3	7.5	
10	58.3	32.3	
9.7	18 6.9	54.0	
9.8	10.7	33.5	
9.5	24.7	51.4	
9.5	19 5.2	23.5	
9.4	8.7	0.4	
9.8	21.0	53.3	
9.5	30.3	22.1	
9.8	30.6	8.2	
9.6	33.1	17.9	
8.7	51.3	28.9	K
9.0	20 0.4	8.0	
8.5	5.6	24.2	K
8.6	34.1	48.6	Sj
10	37.3	40.0	
9.5	37.7	58.1	
9.5	21 5.9	36.7	
9.8	12.9	31.5	
10	19.5	57.4	
8.7	28.4	11.0	K
9.1	30.5	52.5	
9.1	40.2	46.6	
8.8	54.3	20.5	K
10	55.2	23.8	
9.6	56.4	58.5	
8.7	22 20.5	23.2	K
9.4	25.9	51.6	
9.7	36.0	24.3	
9.8	47.7	38.7	
9.1	56.4	57.5	M
9.4	23 51.9	8.9	
9.5	24 22.0	59.3	
7.5	30.0	12.2	K
8.3	26 3.3	37.0	K
10	3.5	47.5	
9.3	18.0	37.5	
9.6	20.3	58.4	
9.1	41.9	6.0	
9.5	46.4	30.8	
9.4	55.8	39.7	
9.4	56.5	33.5	
8.7	27 2.7	31.9	M
9.3	6.6	25.4	
8.7	13.5	21.7	K
9.8	39.6	47.3	
9.5	28 18.8	55.2	
9.8	45.8	42.3	
10	57.3	32.0	

2961—3020

m	10h m s	−8° ′	
8.4	29 28.9	51.9	M
9.0	34.2	35.8	
6.8	46.5	5.4	K
9.3	52.3	6.7	
9.8	30 6.5	35.4	
9.0	14.8	46.8	Sj
8.7	24.8	57.9	K
9.0	42.2	16.8	
9.3	51.1	30.0	M
10	31 35.1	59.8	
9.3	47.6	0.3	
9.4	59.5	21.8	
9.3	32 18.0	43.8	
9.8	33.2	0.4	
8.6	35.0	56.7	K
7.7	33 0.9	17.4	K
9.8	27.6	30.6	
9.1	35.6	17.1	M
9.3	36.4	45.4	
9.9	40.5	34.1	
8.8	49.2	5.2	Sj
9.5	34 40.4	26.7	
9.7	50.4	49.1	
9.3	52.7	57.9	
9.4	35 52.8	27.3	
9.0	58.8	19.3	M
9.8	36 34.3	45.8	
9.8	37 1.7	52.1	
9.8	12.1	51.8	
9.5	26.9	31.1	
9.6	40.2	48.1	
10	52.5	57.8	
9.8	53.3	37.0	
9.9	38 13.4	7.3	
9.2	19.1	20.3	
9.1	32.8	39.3	
8.2	55.6	57.2	K
9.4	39 20.5	2.1	
7.8	34.9	37.8	K
9.0	58.7	15.7	K
9.1	40 3.1	35.9	
9.5	8.7	16.2	
8.5	26.1	44.3	L
9.2	29.2	13.9	K
9.0	41.2	10.3	Sj
8.6	46.9	48.0	K
9.8	41 4.9	2.6	
9.2	31.1	5.9	
9.5	35.6	39.5	
7.3	41.2	20.0	K
9.3	52.1	11.1	
9.4	58.8	7.9	
9.7	42 0.2	5.0	
9.0	19.7	15.7	M
9.6	21.9	18.2	
9.4	27.7	40.3	
7.8	58.1	13.4	Sj
5.2	43 1.5	7.2	K
9.5	16.8	6.7	
10	40.5	47.3	

3021—3080

m	10h m s	−8° ′	
8.3	43 41.6	6.7	K
8.9	43.2	16.3	Sj
9.0	56.1	19.7	
9.1	59.6	20.5	
8.2	44 21.7	5.7	K
9.6	29.2	49.1	
9.8	43.1	18.3	
9.8	45 8.2	30.5	
8.2	55.3	34.6	Sj
9.5	46 35.9	37.4	
10	36.0	57.8	
9.8	39.4	52.4	
9.3	55.7	31.2	
9.8	58.0	4.2	
9.6	47 13.9	39.9	
9.8	38.4	52.6	
9.5	45.7	30.6	
10	47.2	46.8	
9.1	48 0.6	47.5	K
9.8	13.9	55.1	
9.2	14.7	25.7	
9.9	17.1	25.7	
9.4	35.2	20.9	
9.8	45.5	40.9	
9.6	49 24.0	13.9	
9.0	53.0	3.7	K
9.0	50 20.3	44.2	
9.4	28.1	40.1	
9.0	31.1	15.3	K
9.3	32.4	39.2	
9.8	33.3	45.4	
9.5	43.5	26.9	
9.2	51 31.5	13.0	
9.5	34.2	26.9	
9.0	34.7	4.8	K
9.8	35.5	16.9	
9.0	43.1	24.2	
9.1	55.0	15.1	
8.8	52 30.6	26.4	K
9.6	34.9	55.5	
9.3	40.4	54.8	
7.3	53 5.5	42.7	K
8.8	27.0	28.9	
9.3	33.9	2.4	
10	54.3	41.3	
7.3	57.8	59.6	K
9.4	54 7.6	5.8	
8.6	55 34.5	32.8	K
9.5	49.7	52.4	
9.6	56.2	0.9	
9.1	56 4.4	13.4	K
9.3	8.8	44.7	
9.5	12.4	25.7	
7.8	39.9	17.6	K
9.3	56.7	52.4	M
9.0	57 6.4	13.6	K
9.8	34.7	40.8	
9.0	57.6	12.6	M
9.6	58 38.2	56.8	
9.4	39.5	26.8	

3081—3140

m	10h—11h m s	−8° ′	
8.2	58 40.4	22.4	Sj
9.2	59 15.0	29.9	
9.3	15.2	44.5	
9.4	25.8	2.1	
9.6	0 20.9	54.7	
9.1	37.0	39.7	
10	1 6.7	55.1	
9.4	20.6	0.6	
10	26.5	0.3	
9.8	36.2	52.9	
9.0	2 1.8	2.0	
9.0	33.8	44.5	M
9.1	41.4	34.9	
7.7	3 10.2	14.1	K
8.0	15.4	37.8	K
10	41.6	48.0	
9.5	41.6	50.1	
9.5	56.1	57.9	
8.7	4 5.4	34.2	M
9.8	19.1	48.0	
7.5	54.2	41.7	L
9.0	5 18.1	56.3	K
9.8	38.2	21.3	
9.1	42.0	33.1	
9.7	42.5	54.4	
9.5	6 1.0	10.6	
9.4	25.8	13.2	
9.5	26.0	43.7	
9.5	30.7	33.3	
9.8	7 11.5	41.1	
9.3	13.6	21.5	
9.5	25.8	40.2	
9.8	30.9	1.7	
8.7	46.1	19.2	M
9.4	8 5.3	1.2	
9.4	17.1	11.4	
9.5	27.5	7.4	
10	35.2	47.0	
7.5	43.5	6.4	K
9.5	55.3	9.7	
9.4	9 25.6	11.3	M
9.8	26.7	25.6	
9.4	58.1	12.0	
8.8	59.0	8.7	K
9.2	10 8.1	39.6	M
9.6	15.3	36.2	
10	49.5	57.0	
9.4	59.2	32.9	
9.7	11 14.7	44.5	
9.4	17.6	18.9	
9.8	20.9	5.0	
9.4	26.9	9.8	K
9.8	41.9	8.7	
9.1	58.1	28.1	K
9.4	12 22.0	17.2	
9.4	40.9	6.0	
9.8	51.7	56.1	
8.5	52.7	4.2	L
8.9	56.5	27.3	K
9.6	13 1.6	49.5	

3141—3200

m	11h m s	−8° ′	
8.3	13 15.2	53.8	K
9.8	16.5	20.6	
10	23.1	15.9	
9.8	31.9	50.9	
9.6	40.3	26.8	
10	42.9	0.8	
9.4	46.4	44.9	
9.7	14 7.9	32.0	
9.3	9.9	17.8	
9.5	13.4	51.8	
9.5	20.8	1.8	
9.5	25.3	2.9	
9.8	32.4	51.1	
6.5	15 8.5	2.8	K
9.9	8.9	51.9	
9.8	44.8	59.3	
9.0	16 10.6	27.4	
9.4	25.1	36.5	
9.8	28.3	51.0	
9.5	43.1	37.4	
10	17 3.8	40.3	
9.5	23.8	6.7	
9.5	28.8	58.2	
8.6	32.0	47.1	K
9.3	42.4	13.6	
9.5	56.9	22.0	
9.9	18 5.9	17.0	
9.5	9.7	58.2	
9.1	22.5	30.3	M
9.3	59.0	42.7	
9.0	19 20.4	25.1	
9.3	32.1	2.4	
7.9	55.9	4.3	K
9.8	57.3	52.8	
9.5	20 6.3	31.6	
9.5	12.6	39.8	
9.6	20.5	4.0	
9.3	30.8	15.5	
9.8	59.9	4.3	
9.1	22 47.7	33.9	
9.0	23 13.1	2.2	K
9.5	33.7	52.8	
9.6	52.4	7.4	
10	24 48.1	50.4	
9.5	25 15.8	39.2	
8.2	23.6	8.8	K
9.6	28.7	49.1	
8.8	58.4	44.5	M
9.5	26 1.3	11.5	
8.7	4.4	19.6	K
9.9	41.7	1.5	
8.8	46.8	16.9	K
9.5	27 1.2	15.9	
9.2	11.3	31.5	
9.2	23.2	8.1	M
9.5	36.2	8.2	
8.3	51.8	27.7	K
9.5	28 38.0	37.8	
8.8	57.7	8.8	M
9.4	29 10.2	41.0	

3201—3260					3261—3320					3321—3380					3381—3440					3441—3500				
	11h		−8°			11h—12h		−8°			12h		−8°			12h		−8°			12h—13h		−8°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
7.0	29	19.2	30.5	K	9.5	49	17.8	15.2		8.8	11	33.1	33.8	K	9.7	28	28.2	34.9		9.5	45	1.7	21.2	
4.4		19.4	59.9	K	9.5		20.9	44.1		9.5		50.7	2.2		9.4		37.5	2.5		9.5		33.4	19.4	
8.5		30.3	7.0	M	9.4		22.8	11.4	K	7.0		52.8	6.3	Sj	9.4		47.5	49.0		9.1		33.7	26.1	B
9.5		57.8	49.0		9.1		41.9	37.0	K	9.3	12	4.6	15.0		9.8	29	9.3	54.8		9.7		36.6	5.3	
9.1	30	12.7	2.8		8.9	50	25.6	10.6		9.6		6.4	7.0		9.9		31.2	35.4		7.5	46	5.7	16.5	K
9.7		55.6	38.0		9.5		43.8	51.3		9.5		19.7	29.3		10		59.5	46.0		8.8		9.9	49.7	
10		58.0	26.9		8.5	51	30.6	30.3	Sj	10		40.9	52.7		8.4	30	0.8	51.5	Sj	9.5		22.0	59.0	
10	31	1.6	36.8		9.3		44.0	27.3	K	9.5		52.3	15.0		9.8		41.9	18.4		9.4		24.1	8.6	
10		9.5	21.4		9.9		57.4	25.8		9.0		53.9	12.3	K	9.8		42.7	31.3		5.3		48.4	44.8	Sj
9.4		44.6	46.2		9.6	52	2.9	32.5		9.4	13	14.2	49.6		9.4		53.4	26.1		9.8	47	8.3	9.9	
7.2	32	16.9	39.8	K	8.9		14.3	6.0	M	8.9		40.9	10.8	K	10		55.8	52.7		8.3		28.2	23.1	K
9.5		47.2	30.0		9.6		20.8	45.9		7.7		45.9	44.8	Sj	10		57.7	55.6		9.8	48	4.1	17.2	
8.5	33	26.6	2.4	K	9.5	53	7.9	37.1		8.6	14	8.5	35.5	K	10		58.5	18.6		10		20.4	5.0	
9.5		45.0	24.0		9.4		11.3	15.0		9.1		45.2	4.2	Sj	9.9	31	56.8	49.5		9.7		21.3	44.8	
9.5		52.6	52.4		9.4		28.2	9.4		9.2	15	5.8	53.4		9.5	32	13.5	9.4		10		58.2	26.6	
9.8	34	16.2	30.2		9.5	54	43.8	19.0		9.0		20.8	57.8	K	9.5		28.6	35.1		6.8	49	47.0	7.7	Sj
7.0		24.1	15.9	K	9.5	55	13.2	42.6		9.4		44.4	21.5		9.7		35.6	21.1		7.5		55.1	58.6	K
9.5		25.4	9.9		9.1	56	7.3	21.9		7.2		48.3	58.2	Sj	9.9	33	11.0	29.6		9.5	50	14.0	37.4	
10		31.2	43.2		9.0		49.1	52.7	L	9.2	16	19.3	51.8		9.0		20.7	58.6	M	9.4		40.0	14.7	
9.9		42.6	56.4		8.7		53.5	32.9		9.3		31.0	26.2		9.5		32.4	25.1		9.4		43.5	17.3	
9.2	35	14.3	41.5		8.2	57	40.7	29.8	K	10	17	13.7	59.8		7.6		39.1	27.0		9.5		50.1	27.3	
9.5		24.0	25.5		9.0		49.7	32.9	K	9.5		30.3	2.3		9.4		51.0	10.4		10	51	26.8	12.4	
9.9		25.4	8.1		9.2		58.3	35.9	M	9.4		33.4	27.1		9.0	34	5.6	59.9	M	9.5	52	4.4	25.5	
8.2		26.9	32.1	K	9.5	58	4.2	15.6		10	18	4.2	46.0		9.3		8.1	31.6		9.3		7.5	8.5	
7.2		35.2	19.3	B	9.5		31.7	3.8		9.1	19	6.8	19.0		9.2		18.7	6.3		9.3		49.9	33.2	
9.2		37.9	6.0	M	10		53.9	51.3		8.9		8.8	49.8	M	9.9		32.1	37.0		7.5		57.3	18.9	Sj
9.5		59.5	59.4		9.8		54.3	34.5		8.5		22.1	49.9		9.2		35.6	57.8		9.4	53	5.0	12.6	
8.9	36	11.5	22.5	K	8.0	59	18.3	36.3	K	7.8		31.6	1.3	K	10		47.8	35.7		8.9		12.1	37.4	M
6.5		31.7	19.5	B	9.6	0	5.5	25.7		9.5		40.8	36.3		8.8	35	24.3	40.9	K	9.7		32.9	51.4	
9.5	37	6.6	21.3		9.5	2	6.6	51.3		9.5		53.7	53.0		9.5		50.5	18.5		8.9		57.2	40.4	M
9.5		15.8	40.6		9.1		20.9	0.8	K	9.9		55.1	50.9		9.1	36	9.0	2.0		8.5	54	7.2	51.2	K
8.8		21.1	21.4	K	9.5		49.5	54.7		9.2	20	5.4	35.1		9.2		16.9	16.7		9.5		22.2	20.1	
9.7		28.5	17.7		8.8		59.6	43.4	K	9.5		7.4	55.1		7.5		17.7	58.7	Sj	9.2		42.7	42.2	M
9.1	38	11.2	36.7		8.0	3	15.7	35.8	Sj	9.8		26.9	40.7		10		28.8	31.7		9.5	55	6.7	44.3	
9.5		29.9	50.0		7.5		21.7	35.1	Sj	9.5	21	15.8	45.8	M	9.2		29.2	58.3		9.2		9.0	13.9	K
9.2		40.6	27.1	M	9.0	4	5.1	49.9	K	9.1		22.7	52.3	K	9.5	37	3.8	27.6		10		13.1	8.5	
9.4		53.8	2.1		9.5		14.5	54.7		9.7		52.0	29.8		9.8		35.8	49.9		8.9		19.4	13.5	Sj
9.1	39	41.1	21.3		9.5		29.0	40.0		9.5		54.6	55.1		9.8		39.3	42.0		9.6		33.6	55.9	
9.7		45.2	36.9		9.7	5	42.5	3.1		9.3	22	34.0	6.3		9.5		42.7	35.5		9.5		35.0	11.6	
9.3	40	31.0	15.9		9.2		47.1	10.5		9.7		45.8	46.3		9.5	38	9.0	15.3		9.5		43.1	56.6	
7.3		53.9	4.2	K	8.0		54.9	16.3	M	9.8	23	0.8	57.0		9.5		23.4	25.8		9.5		45.9	5.5	
7.8	41	8.2	34.1	K	9.2		56.3	40.6		9.1		18.9	35.8		9.3		26.5	39.7		9.8	56	45.0	57.5	
7.5		39.6	18.8	K	7.8	6	11.4	42.1	K	8.2		34.4	59.0	Sj	8.0		23.2	30.7	K	9.2	57	1.5	2.3	
8.7		45.8	2.4	B	8.8		35.6	37.6	Sj	8.7		40.7	41.2	K	7.3	39	35.4	25.0	K	9.7		22.1	8.2	
9.2	42	58.4	23.0		9.5		37.6	18.5		9.8		49.5	59.1		8.5	40	29.0	22.4	L	9.8		44.0	27.4	
9.3	43	12.1	35.8		9.8		43.0	53.9		7.0		56.3	22.6	K	8.7		30.5	21.1	L	9.5	58	5.5	35.7	
7.8		20.5	35.6	K	9.8		50.9	57.2		9.8	24	38.0	56.4		9.0	41	4.1	58.8	M	9.8	59	1.5	58.5	
9.2		23.1	40.1		8.0	7	11.2	10.8	K	10		39.9	50.6		9.8		13.6	43.7		9.1		7.1	47.6	
7.5		39.5	28.0	K	9.7		39.5	27.1		9.1	25	1.8	35.1		7.3		28.7	25.4	Sj	10		20.2	1.6	
9.8	44	16.0	7.5		9.6		43.3	38.6		9.6		50.8	36.0		9.3		29.7	53.9		10		54.0	10.5	
9.5		30.8	28.4		8.8	8	29.5	24.2	K	9.7	26	3.3	47.5		9.7	42	1.1	2.3		5.5	0	58.9	12.2	K
9.3		51.4	23.0		9.0	9	13.9	19.3	K	5.3		17.8	38.9	B	9.8		26.4	17.0		9.4	1	5.3	23.7	
9.4	45	18.0	27.5		9.8		47.1	17.3		8.8		39.2	2.9	Sj	9.2		40.7	14.4		9.5		20.6	40.9	
9.2		19.4	8.7	K	9.5		52.9	49.4		8.7		55.4	48.1	L	9.4	43	31.3	54.8		9.5		26.9	36.4	
8.2	47	11.3	54.7	K	8.2	10	12.4	53.8	K	9.1	27	4.4	7.8	K	9.5		41.2	26.6		7.0		40.7	45.8	Sj
8.5		28.0	36.1	K	7.5	11	5.1	5.5	M	9.8		43.9	28.9		9.0		44.0	24.5	Sj	10		40.9	32.5	
9.1		52.1	46.7		9.5		16.5	50.0		9.4		47.7	23.3		9.5	44	4.3	58.9		9.3		55.8	49.5	
9.1	48	34.0	39.6		9.4		22.9	58.5		9.0		57.2	38.3		9.5		31.5	12.0		9.8	2	34.5	48.6	
9.8		52.9	21.9		9.6		24.2	48.9		9.6	28	20.8	39.6		9.2		33.2	34.3		9.8		53.8	57.0	
9.2	49	7.0	45.2		9.4		31.0	13.0		8.8		23.6	15.7	K	9.0		36.4	54.3	K	9.0	3	24.3	8.9	

3501—3560				3561—3620				3621—3680				3681—3740				3741—3800			
	13h	—8°			13h	—8°			13h	—8°			13h—14h	—8°			14h	—8°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	3 35.0	10.1		10	20 21.1	16.8		9.0	35 20.6	53.2	K	10	54 33.1	57.9		9.5	9 46.2	40.5	
8.7	44.3	48.8	K	8.0	51.6	59.4	K	9.5	29.4	8.1		9.8	48.0	30.9		9.5	58.5	37.1	
9.5	4 5.4	24.2		9.4	21 3.3	33.4		9.0	33.3	27.9	K	9.2	54.3	6.8		9.4	10 0.8	5.5	
9.5	10.4	5.2		9.5	7.2	24.9		9.0	36 5.5	44.3	K	10	55 15.5	33.1		9.1	5.4	18.5	K
9.8	28.8	42.7		9.8	20.9	11.6		9.5	35.5	40.9		8.5	19.1	48.4	K	9.8	36.5	30.7	
9.4	29.4	38.9		8.7	44.9	1.9	Sj	9.0	38.0	59.9		9.4	56 6.9	19.5		9.7	37.9	42.0	
10	44.1	4.7		9.5	55.5	36.2		9.4	56.4	44.6		9.5	25.9	22.0		9.1	49.0	21.1	M
8.5	5 39.7	9.9	K	9.2	22 12.3	45.0	M	8.8	59.3	36.3	K	8.0	39.1	49.9	K	8.7	49.7	44.4	K
10	6 0.4	57.4		9.4	21.3	45.1		9.5	37 0.4	28.6		6.5	41.0	33.2	K	9.6	53.9	5.2	
9.5	11.7	43.3		8.8	58.0	49.1	B	9.8	5.3	2.1		9.2	57 1.2	3.3		8.7	11 15.0	29.3	K
9.5	14.2	1.8		9.8	23 9.7	11.7		9.9	18.3	7.7		8.8	8.1	53.9	K	10	20.7	18.3	
9.4	25.9	2.3		8.7	10.2	1.4		9.6	56.2	13.2		var	12.0	30.0		9.4	46.8	26.0	
9.8	54.8	30.1		9.3	15.4	2.2		8.3	58.5	51.9	K	8.0	31.4	21.1	K	9.5	12 3.5	38.9	
8.7	7 8.8	47.4	M	8.5	16.5	56.6	M	9.7	38 16.4	21.9		9.5	58 0.5	31.8		9.7	3.8	41.5	
9.2	17.8	26.3		9.9	28.5	54.8		9.5	36.7	20.1		9.9	11.5	37.9		9.5	16.4	36.5	M
9.5	45.9	45.2		7.5	46.5	21.5	K	9.1	38.6	14.8		6.8	37.3	11.8	K	9.4	21.9	33.0	
10	8 0.7	39.7		9.0	24 16.3	39.5	Sj	9.5	39 6.7	21.1		5.0	59 3.0	37.0	K	8.7	33.4	1.0	K
9.3	22.6	51.6		9.3	35.0	24.0		9.6	17.3	4.0		9.8	8.4	34.3		9.5	36.0	8.0	
9.2	34.2	3.1		9.5	25 0.0	6.6		6.3	33.9	59.0	K	9.5	33.9	15.6		9.2	13 26.6	48.4	
10	39.9	52.9		9.0	9.4	25.3		9.5	42.7	5.0		9.5	44.9	8.9		9.2	52.4	46.2	
9.5	57.3	11.9		9.3	51.9	13.1		8.9	40 20.9	3.9	K	9.7	46.1	49.9		8.8	14 5.7	0.6	K
9.5	9 23.7	8.7		9.1	26 2.6	45.2		8.9	41 8.7	50.6	K	9.5	50.1	54.4		9.5	14.9	37.1	
9.5	28.8	31.1		9.8	34.9	55.6		9.3	18.8	26.2		9.7	55.1	48.4		9.5	21.3	4.2	
9.0	10 3.2	53.6		7.8	27 4.5	21.9	Sj	9.0	57.7	28.2	Sj	9.4	0 45.6	20.7		9.5	52.4	23.9	
9.0	8.2	18.1		9.5	13.4	20.0		9.2	42 21.1	22.7		8.5	57.2	10.2	Sj	9.3	15 21.9	16.7	M
9.1	20.5	1.2		8.7	17.4	17.3	K	9.8	43 2.4	49.2		9.5	1 25.9	21.3		9.3	39.5	47.4	
8.8	43.7	48.8	B	9.5	23.6	56.0		9.5	6.3	55.0		9.3	26.4	13.8		9.7	59.6	17.6	
9.7	45.5	54.3		10	24.7	46.9		9.2	27.7	36.8		9.5	34.1	54.9		10	16 21.3	5.7	
9.5	55.2	40.1		8.4	39.3	9.8	K	9.4	54.7	47.3		9.3	51.2	7.8		9.3	27.3	56.0	M
9.3	11 21.5	40.0		9.5	57.1	32.1		9.8	59.8	0.5		9.4	2 1.2	54.9		9.1	38.3	2.0	K
10	28.7	50.5		9.6	28 7.4	15.6		9.5	44 18.1	13.2		9.7	11.3	17.2		9.1	56.3	0.0	K
10	30.6	48.1		9.5	11.5	3.4		9.5	25.3	0.9		10	25.0	38.7		9.5	17 0.5	6.1	
8.8	35.6	23.5	K	9.1	17.8	8.7		9.5	39.2	22.0		10	26.0	26.2		9.5	12.0	57.3	
9.8	37.1	16.0		9.3	32.0	48.4		9.5	43.2	0.5		10	26.9	7.9		9.3	12.4	32.5	
9.8	51.8	24.7		9.5	37.9	17.0		9.5	45 7.4	4.6		9.3	39.1	9.1		9.3	25.3	31.3	
8.3	12 12.7	20.4	B	9.8	29 5.0	29.6		9.8	29.2	1.4		9.5	3 9.6	52.9		10	30.8	53.0	
8.5	47.2	17.5	K	9.7	8.3	43.0		8.8	46 15.8	7.6		9.6	27.4	2.4		9.5	48.3	35.7	
9.8	13 3.2	39.8		9.5	14.6	59.8		9.1	16.1	47.6		9.5	45.6	46.0		9.1	18 4.4	25.3	
9.7	14 2.5	40.2		9.6	24.0	0.1		9.5	35.7	33.0		9.2	58.7	26.4		9.3	32.4	16.8	
8.3	31.7	17.8	K	9.5	50.0	0.8		9.2	47 12.4	4.0		9.5	4 11.5	58.6		10	54.1	25.7	
9.5	39.3	36.0		9.2	30 35.1	59.8		8.8	27.8	51.5		9.3	15.5	44.5		8.7	20 27.1	6.3	M
9.4	15 9.4	4.0		8.7	42.6	21.1	Sj	9.4	34.8	53.3		9.4	22.5	4.9		9.1	53.8	16.6	
9.3	10.4	33.3	M	9.6	45.6	42.2		9.5	43.1	9.1		10	5 46.3	18.5		9.5	59.1	53.2	
8.3	49.7	38.5	Sj	8.7	56.5	25.5	L	7.5	52.3	48.7	K	8.6	48.0	18.7	K	9.5	21 18.1	48.3	
9.5	53.1	18.3		9.3	31 27.0	2.8		10	54.1	13.2		8.9	57.1	27.4	K	9.5	22 6.2	14.5	
9.8	16 27.2	40.5		9.5	41.3	17.5		9.5	48 4.3	42.2		9.5	6 5.6	37.8		9.5	56.3	23.1	
9.8	27.6	8.1		9.3	43.4	40.7		6.2	8.0	50.8	K	9.5	8.6	27.4		9.8	56.7	45.1	
9.8	33.4	0.2		8.0	44.5	36.3	K	9.6	10.9	8.4		9.6	38.0	44.8		9.5	23 5.2	17.1	
10	57.2	18.0		9.5	32 8.8	20.9		9.6	57.3	50.5		9.0	52.8	55.2	M	9.5	10.9	25.5	
7.2	17 39.2	1.5	K	8.5	16.0	32.3	K	9.2	49 4.6	36.8		10	54.9	57.6		9.7	11.8	28.9	
9.8	41.6	3.7		9.0	42.9	33.5		9.5	13.1	21.7		10	55.0	44.7		9.4	58.3	9.7	
10	41.8	59.9		9.1	33 19.9	23.1	Sj	8.5	50 33.0	20.8	Sj	9.0	8 13.1	9.0		9.3	24 18.2	16.5	
9.7	49.9	58.1		9.5	39.0	27.2		9.0	51 1.6	30.6		8.5	16.3	42.1	K	9.3	48.4	26.5	
9.5	18 15.9	47.2		9.3	54.7	5.1		9.2	15.2	41.0		10	25.8	20.6		9.7	53.9	47.7	
9.5	26.2	20.8		9.1	56.8	4.8	K	8.8	52 3.3	56.3	K	9.4	27.9	25.0		9.0	26 11.9	51.3	M
9.7	31.4	45.3		9.5	34 12.4	28.6		9.0	19.6	36.6		9.3	39.0	46.1		9.5	24.0	45.3	
9.5	44.1	15.3		9.5	17.9	28.7		10	53 2.1	36.4		6.0	9 7.1	12.3	K	9.0	27 17.7	10.7	
9.5	19 11.8	53.8		8.7	18.6	56.1	M	9.0	30.6	32.6	Sj	9.3	31.8	15.0	K	8.7	23.6	40.1	L
8.7	54.1	26.4	M	9.4	27.5	34.5		9.3	58.4	17.7		9.2	39.6	48.4		7.8	32.8	27.2	K
10	20 3.2	0.3		8.2	29.0	22.3	K	9.0	54 8.9	2.4	K	6.5	40.0	20.2	K	9.5	36.0	59.7	

3801–3860					3861–3920					3921–3980					3981–4040					4041–4100				
	14h		−8°			14h–15h		−8°			15h		−8°			15h		−8°			15h		−8°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.8	27	37.1	16.5	K	9.1	48	1.9	27.1	K	10	5	48.8	23.1		7.0	20	19.9	49.5	B	9.7	31	56.8	11.9	
9.7		58.6	7.0		9.3		32.6	4.7		9.0		58.9	4.1	K	9.4		21.6	1.2		9.7		56.8	10.1	
9.0	28	0.9	57.6	M	8.3		48.0	20.7	K	7.4	6	8.5	56.6	K	8.0		22.2	50.2	B	9.5	32	17.0	20.8	
9.1		19.8	49.9		9.5	49	18.5	35.6		8.8		16.9	13.3		10		33.1	51.5		9.0		20.0	27.5	
7.5		33.5	58.3	K	9.5		48.0	54.5		9.1		20.5	1.0	K	8.3		38.6	39.1	L	9.8		33.2	50.8	
9.0		51.2	20.2		9.8		51.2	25.6		9.7		33.3	34.8		7.8		50.4	14.5	K	7.8		46.4	37.6	K
9.0		55.2	32.8	K	10	50	3.4	59.6		8.9		34.1	18.0	K	9.1	21	32.2	1.5	M	9.5		53.2	42.2	
8.8	29	13.4	18.5	K	9.7		4.2	58.1		9.2		45.3	10.2		9.5		39.6	24.5		9.6		54.0	17.7	
9.1		33.7	23.0	K	10		10.5	17.4		9.8	7	2.8	32.7		9.8		55.1	24.1		8.2	33	5.9	30.9	K
8.4	30	22.8	2.4	K	9.7		14.3	17.0		9.8		4.6	17.7		9.4	22	3.7	8.3		8.2		11.5	15.9	K
9.9		38.9	57.7		9.0		26.9	5.8	K	9.8		42.8	26.5		9.9		9.3	45.0		9.3		58.5	6.4	
9.5	31	43.1	18.9		9.4		32.9	6.6		9.8		59.5	56.5		9.2		55.4	26.2		8.3		59.2	10.2	K
9.0	33	20.9	52.6		9.5		46.0	56.8		9.5	8	15.8	3.8		9.5		55.9	48.4		9.5	34	11.3	43.6	
9.5		27.4	59.7		9.4		47.5	51.2		7.8		48.8	40.1	K	9.8		58.2	19.0		9.4		15.8	43.8	
9.5		40.5	10.0		7.3		49.6	7.9	K	2	9	12.4	50.5	K	9.5	23	9.7	20.7		9.8		24.5	27.8	
9.0		58.7	33.1		9.7		49.8	15.1		9.9		23.3	23.8		9.9		34.3	44.1		9.8		53.7	8.4	
9.8	35	4.2	19.3		9.2		54.9	8.8	K	8.7		30.1	5.3	M	9.9		40.6	28.0		10	35	3.8	38.2	
9.4		7.8	38.3		9.5	51	1.9	10.4		9.4		52.1	42.2		8.9	24	18.6	31.9		8.7		20.5	40.1	M
9.8		14.4	52.4		8.7		2.1	27.8	Sj	9.8		55.8	7.0		9.4		34.8	2.3		9.5		28.4	5.6	
8.5		25.4	43.2	K	9.6		3.7	7.6		9.8	10	3.3	14.8		9.8		45.3	54.7		7.5		54.4	51.1	K
9.0		38.2	30.5		9.1		8.9	28.6		10		43.1	43.1		10		51.3	57.4		9.5	36	3.0	19.8	
9.5		50.5	9.6		8.8		49.6	25.6	K	9.8		43.3	7.1		9.4	25	10.1	8.9		9.5		10.2	59.8	
9.1	36	23.9	3.0		9.7		53.6	19.5		10	11	6.2	40.4		9.2		12.3	39.8	M	9.8		38.2	27.0	
9.2		27.7	37.2		8.3	52	36.9	33.3	K	9.9		18.1	44.5		9.5		15.0	30.7		10		39.5	1.7	
7.8		36.3	51.9	K	9.6		46.0	47.8		9.0		19.4	50.9		9.4		15.8	33.0		8.5		40.1	46.0	K
9.0	37	15.2	31.1	K	9.4		46.8	25.0		9.1		28.5	59.5	K	9.8		32.6	7.8		9.7	37	8.2	12.1	
8.8		21.6	18.7	Sj	9.6	53	11.3	9.4		7.0		33.5	36.4	Sj	8.0		55.3	56.2	K	9.7		14.3	47.3	
9.5		24.6	23.8		10		15.2	48.9		9.8		54.2	24.8		9.1	26	0.5	0.3	M	9.6		55.8	35.6	
8.3		35.1	35.9	K	10		20.7	46.6		7.8	12	11.8	7.2	K	9.2		32.5	28.3		9.1	38	2.8	34.4	M
9.4	38	22.0	12.0		9.2		34.0	9.1		9.1		12.9	6.3	K	5.5		36.3	41.3	Sj	9.1		4.2	54.0	
9.8		58.8	56.0		10		34.6	26.6		9.4		49.3	49.7		10		47.8	55.0		9.9		37.2	43.3	
9.5	39	9.0	27.7		9.4		54.7	26.8		9.8		54.0	57.9		9.4	27	3.0	37.8		8.6		38.6	20.0	K
9.0		29.6	27.4	K	9.3	54	23.5	20.6		8.0	13	28.5	16.8	Sj	9.1		3.8	52.3		8.9		43.7	13.3	K
9.4	40	12.9	2.3		9.2		30.0	24.2		9.2		28.7	9.5		9.6		30.1	2.9		10		46.5	57.5	
9.8		44.0	49.5		9.2		59.4	33.3		9.6		37.6	46.3		10		44.6	11.3		9.0	39	3.3	59.0	K
8.4		47.6	32.8	Sj	9.6	55	9.8	13.9		8.3		52.8	7.9	K	9.8		45.4	0.0		9.9		3.9	5.5	
10	41	18.0	41.5		8.5	56	2.0	43.9	K	9.3		59.4	44.2		9.5		58.3	4.2		10		15.0	50.7	
9.3		32.2	32.8		9.2		12.8	51.0		9.1	14	3.0	49.0		8.7	28	1.0	28.8	K	9.5		21.0	2.5	
9.3		37.6	23.8		9.8		30.9	35.1		9.8		7.6	32.5		10		3.9	45.0		8.9		30.1	27.9	K
9.6		47.8	2.3		9.0		40.7	26.2		9.5		36.7	39.9		10		30.7	40.5		9.8	40	5.1	34.1	
7.2	42	1.4	35.9	K	9.0	57	6.0	14.7		9.6		54.2	26.6		9.4		35.0	19.2	Sj	10		25.7	27.8	
9.9		3.7	1.3		9.4		53.1	59.1		8.8	15	5.2	36.0	K	9.4		58.1	5.2		9.5		36.2	13.1	
9.0		18.7	20.6	M	9.3		55.0	33.1		9.1		13.3	20.7	M	8.8	29	5.0	4.9	L	9.5	41	4.2	46.2	
9.4		21.6	25.4		9.4	58	12.6	5.7		10		53.2	16.5		9.3		9.5	41.9		8.5		15.1	48.1	K
9.0		23.8	49.9	Sj	8.3		17.1	58.2	Sj	9.2	16	30.1	43.0		9.0		34.2	46.2		9.4		17.2	6.0	
8.7	43	6.6	18.8	K	8.5	59	13.4	12.5	K	9.4		53.8	5.7		9.5		46.5	44.8		9.5		34.1	10.6	
8.7		30.5	22.7	Sj	9.4		19.5	9.6		10	17	7.6	3.5		8.3		48.3	33.6	K	9.3		57.5	35.5	
9.6		36.0	24.0		8.2		22.9	21.9	K	8.9		12.2	51.5	K	9.5		50.1	13.7		8.9	42	3.1	1.5	Sj
9.4	44	52.9	27.1		9.3	0	45.9	6.5		10		58.3	48.9		9.8	30	22.8	49.0		8.5		15.8	59.1	Sj
9.5		59.9	24.2		9.2		47.9	7.3		9.4	18	29.3	49.1		9.0		31.6	16.3	M	9.3		37.1	38.4	
8.0	45	8.7	5.7	K	9.4		55.6	56.5		9.5		31.7	35.6		7.0		50.8	18.8	Sj	10		52.4	51.3	
9.8		40.1	57.1		9.8	1	4.8	3.3		9.0	19	6.6	39.3		8.0		50.8	19.2	K	8.9	43	4.6	35.1	K
9.6		44.5	16.9		9.0		47.3	29.0	M	9.4		9.4	49.8		9.4		58.5	31.1		9.9		22.6	15.2	
8.6	46	1.0	33.7	K	9.5	2	10.9	38.4		9.1		13.9	5.4		9.4	31	3.5	34.7		8.4		26.4	54.1	K
7.3		5.5	29.0	Sj	9.9		22.7	54.8		9.5		27.3	40.6		9.8		17.3	50.9		9.8	44	26.9	55.0	
9.4		16.2	42.6		9.7		37.5	5.5		9.8		35.1	41.6		8.7		17.9	5.5	Sj	9.5		38.3	57.7	
9.7		55.1	52.6		9.8	3	21.7	47.2		9.0		40.3	58.7	K	9.5		33.8	48.1		9.5	45	13.6	4.9	
9.0	47	23.5	29.5		7.8	4	4.9	17.2	K	9.8		50.7	9.4		9.5		41.7	13.7		9.8		14.2	15.0	
9.5		24.9	7.7		9.6		38.9	42.9		7.5		51.1	25.9	K	8.5		44.0	30.0	K	9.8		27.1	6.6	
8.0		38.5	53.0	Sj	9.5		58.4	17.2		9.8	20	1.5	3.8		9.8		55.7	57.2		9.0		31.7	9.9	Sj

4101—4160				4161—4220				4221—4280				4281—4340				4341—4400			
	15h	—8°			15h—16h	—8°			16h	—8°			16h	—8°			16h—17h	—8°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	46 13.2	58.9		9.8	59 37.4	27.3		9.6	15 20.4	44.1		9.8	30 53.9	6.7		10	45 13.1	32.2	
9.6	24.7	7.5		9.3	46.7	56.3		8.0	31.5	38.5	K	6.8	55.0	19.3	Sj	9.0	15.3	8.9	K
9.8	25.7	25.8		9.3	52.4	12.8	M	9.2	44.1	21.6		9.0	31 8.3	30.1		8.6	22.0	4.9	K
8.3	31.6	8.8	Sj	9.6	0 47.7	47.5		9.6	46.0	25.0		9.8	30.9	14.5		9.4	39.6	36.0	
9.0	47 41.1	26.2	M	8.5	50.4	22.3	M	9.6	16 2.7	17.3		9.4	32 4.1	8.5	M	9.7	43.5	29.9	
7.0	52.6	12.6	Sj	8.9	58.9	12.1	M	9.7	14.9	50.4		10	23.8	4.0		8.2	53.5	43.8	
10	48 4.3	42.2		9.4	1 15.7	28.9		8.6	15.3	45.6	K	7.0	33 4.9	1.4	Sj	8.5	46 16.9	2.6	
9.8	31.5	45.0		9.2	27.9	34.7		9.8	31.4	40.5		9.6	17.5	42.2		8.0	47 18.7	7.9	Sj
9.3	46.2	28.1	M	9.5	50.0	15.3		9.8	37.0	49.2		9.5	19.9	29.1		9.8	20.3	4.1	
9.3	49 16.0	30.5		8.7	56.5	49.0	M	9.8	17 58.6	17.3		9.9	25.4	7.0		9.4	24.7	2.2	
8.8	23.3	52.2	K	9.7	2 25.0	39.1		9.9	59.7	11.7		10	34 11.6	37.6		9.7	32.3	40.5	
9.8	25.5	29.1		10	25.2	17.3		9.0	18 20.2	54.3	M	9.3	20.2	30.2		8.8	43.6	4.3	K
9.4	27.1	8.4		9.8	3 1.9	23.8		9.6	47.0	33.6		10	33.6	38.8		9.1	45.2	56.8	
9.0	37.0	6.7		9.8	41.0	53.1		8.0	48.5	23.5	L	8.0	35 7.9	40.6	M	9.0	47.4	42.5	
9.5	50 2.0	15.0		9.5	42.4	11.5		9.1	19 2.6	34.4	M	9.8	12.2	21.9		9.4	48 18.2	44.6	
9.4	12.7	0.8		9.1	44.5	7.3		9.9	2.7	31.0		9.0	22.2	29.2	M	8.0	20.2	50.4	Sj
8.8	14.1	16.6	K	9.6	49.7	31.2		9.8	4.0	26.2		9.3	38.7	12.3		9.0	23.3	18.5	K
9.6	28.5	18.8		9.7	4 9.5	45.1		10	11.9	35.3		9.6	53.8	2.4		10	38.0	20.9	
8.4	42.0	34.7	L	9.5	12.9	35.2		9.6	16.1	41.0		9.5	36 26.3	1.1		9.4	53.8	47.9	
10	58.5	47.7		5.0	16.0	10.1	K	9.5	32.2	8.5		9.5	52.7	20.6		9.0	49 23.9	9.1	
8.9	51 4.7	4.0	M	9.5	37.4	25.4		9.0	37.6	14.5	M	9.3	37 1.6	40.2		9.5	26.4	24.1	
9.5	10.6	17.0		9.3	38.4	23.2		9.9	51.1	40.3		9.5	2.5	23.7		9.0	38.8	48.8	
8.5	25.5	20.2	Sj	9.9	44.9	48.7		5.2	58.2	2.0	K	9.9	41.7	34.4		9.4	47.1	34.1	
9.0	26.3	17.0	K	9.8	47.4	51.9		9.5	20 27.9	38.4		9.3	48.8	43.1		9.7	59.5	58.6	
10	52 0.4	56.8		9.0	5 3.7	13.6	K	9.3	33.9	26.1		8.5	57.2	11.8	K	9.0	50 4.3	35.2	
9.8	13.5	18.5		9.4	14.3	3.0		9.1	42.0	21.0	K	9.6	38 13.7	18.8		8.5	51 1.4	23.5	Sj
9.8	23.6	5.2		9.5	45.0	16.5		10	54.0	1.7		9.0	28.4	46.0	K	9.5	14.6	53.8	
9.5	53 16.9	49.8		8.0	51.6	49.5	K	9.9	21 3.8	16.9		9.5	39.9	59.2		10	28.0	33.6	
9.5	22.4	52.1		9.0	6 10.9	25.0	K	9.3	53.1	8.9	M	9.5	46.7	36.6		9.8	52 34.4	45.5	
9.8	23.5	2.1		10	29.1	44.8		8.5	22 47.1	8.9	M	9.8	55.7	38.4		9.8	41.4	21.5	
9.8	27.6	10.4		9.5	7 19.3	3.3		8.5	56.3	47.0		9.5	56.5	0.2		9.8	53 31.3	27.7	
9.6	38.9	57.9		9.5	20.3	5.3		8.8	57.5	10.7	M	9.6	39 14.2	11.9		9.3	40.9	47.4	
9.2	52.0	16.2		9.1	29.8	57.8		9.8	23 42.6	46.1		9.7	18.8	45.5		9.3	45.4	27.7	
9.2	54 4.7	1.7	M	9.7	46.3	44.5		9.7	24 20.0	3.9		9.5	49.6	36.0		8.4	54 2.1	43.7	K
9.5	42.5	9.7		9.7	8 12.6	18.8		9.8	36.4	56.1		9.0	55.7	54.9	K	9.8	29.9	21.4	
8.0	52.7	5.5	Sj	9.5	32.6	27.2		9.6	52.1	10.8		9.5	40 20.1	58.7		9.3	34.9	18.0	
9.5	59.6	15.8		8.7	55.3	3.8	L	8.5	25 24.9	28.2	Sj	9.8	28.7	40.5		9.4	37.9	23.8	
9.0	55 17.5	2.7	Sj	9.0	9 7.7	59.8	Sj	9.2	24.9	1.6		9.5	31.2	15.3		9.5	41.5	31.0	
8.9	18.5	22.2		9.6	24.1	24.9		9.0	28.0	20.6	M	9.7	41.1	56.4		8.7	55 11.5	3.0	M
8.0	27.0	4.3	Sj	9.7	29.7	59.2		9.5	26 10.7	56.8		7.4	41 5.8	40.2	Sj	8.5	19.1	48.4	
9.7	56 2.7	0.0		9.5	10 6.0	25.0		10	31.3	43.0		9.5	14.2	14.1		9.8	40.7	41.6	
9.5	31.0	27.5		9.2	8.1	16.3		9.6	47.4	43.9		9.6	15.4	40.9		9.5	56 18.2	15.9	
9.0	32.1	16.5	Sj	9.8	34.4	43.3		9.9	27 6.6	12.6		8.8	24.1	48.4	K	9.5	59.9	18.6	
8.5	37.5	27.2	K	9.8	40.1	21.3		9.3	27.4	28.3		9.5	37.2	35.5		9.7	57 3.8	47.6	
9.2	46.3	52.2		8.2	11 0.1	43.0	Sj	8.5	28 6.9	26.9	Sj	9.4	56.7	22.7		9.1	58 20.8	43.1	
10	57.5	16.6		9.5	11.1	6.2		9.1	13.3	35.9	M	9.8	42 6.7	23.2		8.8	37.7	20.1	K
9.3	58.6	41.2		9.3	53.7	13.4		9.4	16.7	7.2		9.6	20.3	17.9		9.0	59 19.2	23.7	K
9.6	57 2.7	47.8		9.5	55.8	51.2		9.6	24.6	47.9		8.5	39.2	28.6	Sj	9.5	33.8	1.2	
10	8.5	22.3		9.0	12 12.9	39.5	M	9.8	30.8	37.4		9.1	51.7	28.9	Sj	9.2	0 1.5	35.0	
9.9	9.8	23.2		9.6	15.6	14.4		6.8	38.9	32.9	K	9.2	43 1.6	43.0		9.4	15.6	8.8	
9.7	29.0	36.2		9.5	36.0	30.5		9.5	44.2	48.8		8.3	4.2	21.0	L	9.0	42.5	30.5	K
9.8	40.8	49.8		9.8	13 6.6	43.6		9.4	48.1	28.3		9.3	16.1	44.6		7.8	2 6.8	19.7	K
8.0	58 10.0	22.2	K	9.2	26.1	39.6	M	9.6	50.7	40.7		9.3	38.2	11.5		9.8	51.4	24.5	
9.8	23.7	38.0		10	28.1	19.0		8.5	29 2.8	35.4	K	9.8	44 4.4	14.1		8.2	3 40.5	37.6	K
9.5	35.4	23.3		9.6	58.1	5.2		9.6	7.0	43.5		9.3	6.1	29.3		9.0	52.6	15.9	
9.7	36.9	0.5		7.0	14 25.5	23.4	Sj	9.4	25.6	4.0		9.8	6.8	45.4		9.5	4 30.4	5.4	
9.0	38.0	7.5	K	9.7	46.4	5.8		9.5	28.0	21.6		7.8	6.9	36.7	Sj	9.8	33.6	48.3	
9.7	41.3	49.9		9.7	47.8	2.0		9.1	56.9	26.2	K	9.4	12.7	11.0		9.7	45.6	58.4	
9.4	52.9	42.9		9.5	15 1.8	44.5		9.1	30 22.7	53.2	M	9.3	23.2	4.7		9.0	6 10.0	42.9	
9.3	59 4.0	9.6		9.2	14.2	6.6		9.7	39.3	2.3		9.5	27.6	27.7		7.8	16.1	13.7	K

4401—4460				4461—4520				4521—4580				4581—4640				4641—4700			
	17h	—8°			17h	—8°			17h—18h	—8°			18h	—8°			18h	—8°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	6 46.9	44.9		9.3	27 17.2	1.7		9.0	45 42.6	43.7	M	9.5	8 29.8	3.6		9.1	27 45.4	23.5	
10	7 7.1	24.8		9.4	18.3	42.8		9.7	57.4	52.3		9.4	58.2	43.0		9.4	28 2.8	28.7	
9.3	19.5	26.9		9.3	44.6	40.4		9.9	46 17.8	31.4		7.2	10 13.0	41.1	K	9.8	6.4	11.5	
9.6	39.9	47.2		9.1	52.5	11.7	M	9.5	29.2	19.6		9.2	29.1	2.1		9.6	15.2	18.5	
9.3	40.6	12.9		9.1	28 29.5	57.8		9.3	47 37.1	59.4		6.5	12 12.3	2.1	K	9.5	25.8	59.3	
8.4	55.5	30.0		9.1	29 1.5	56.1		10	40.6	54.4		8.6	13.5	36.2		9.7	29.4	17.3	
9.4	8 1.5	23.6		9.3	8.9	35.9		9.2	44.5	59.9		9.5	41.3	56.1		9.5	32.3	15.3	
9.8	23.6	13.8		8.8	11.5	18.1	M	9.1	48 29.3	43.3		9.0	55.2	56.8	K	9.5	34.0	33.0	
9.4	30.6	49.2	M	8.7	23.8	37.6		8.2	46.7	59.2	Sj	9.2	56.7	28.0		10	38.2	17.3	
9.3	42.0	19.0		9.7	31.4	53.7		9.4	49 5.6	34.0		9.7	56.8	45.2		9.5	40.5	22.4	
9.5	51.0	41.5		9.2	54.5	19.9	M	7.7	17.0	2.5	K	9.5	13 18.8	21.7		9.1	41.9	39.5	
9.5	9 45.5	36.1		4.8	57.5	1.4	K	9.4	50 14.1	50.6		9.4	19.5	47.2		9.2	46.8	17.7	
9.4	50.0	30.5		7.4	30 5.1	56.5	K	9.4	15.2	47.8		9.3	33.6	20.5	B	9.6	47.3	25.8	
9.5	55.7	42.7		9.8	11.9	50.4		7.5	44.2	29.9	K	9.5	14 10.2	59.9		9.7	51.7	17.0	
8.7	10 1.1	10.5	K	8.4	16.5	2.5	K	8.1	53.8	42.8	K	9.8	21.2	54.6		10	55.2	20.2	
9.8	3.0	23.6		8.9	19.7	0.8	K	8.7	58.7	55.2	B	9.8	28.7	47.1		9.0	29 21.4	47.2	M
8.7	14.6	8.9	Sj	9.4	26.9	32.1		9.5	51 12.3	47.5		9.2	15 27.0	14.9		9.5	36.7	55.8	
9.2	27.4	49.1	M	9.0	32.5	11.9		8.8	30.5	19.0	M	9.8	16 31.1	11.4		9.0	44.8	32.7	
9.8	27.5	58.7		8.5	41.6	45.1	M	9.3	39.6	19.1		7.2	36.5	15.0	K	9.5	45.3	27.7	
9.4	40.6	8.3		9.2	31 13.5	40.4		9.4	52 14.5	16.5		9.4	47.3	39.8		8.7	45.7	49.5	
9.1	11 6.6	12.8		9.7	31.8	51.6		9.8	45.3	57.3		9.4	17 2.1	24.2		8.8	53.8	51.9	
9.1	8.8	59.2	M	9.0	32 6.1	35.9		8.9	53 1.6	28.1		9.2	2.6	23.7		9.8	58.3	59.4	
9.5	18.7	57.6		9.3	15.7	26.3		9.2	4.3	41.8		9.5	39.7	55.2		9.1	30 9.2	29.3	
9.5	34.4	36.4		8.4	27.0	0.5	Sj	9.6	25.7	43.7		9.7	18 7.4	43.8		9.5	16.8	50.7	
9.5	12 26.5	20.5		9.5	33 5.2	42.9		9.5	36.3	33.4		7.8	14.0	13.6	K	8.6	31.6	43.8	M
9.4	37.7	58.5		9.5	34 7.6	44.4		9.8	39.8	56.6		7.5	35.0	15.7	K	9.4	32.5	31.0	
9.0	45.9	45.4		9.5	32.1	28.1		8.8	54 44.6	45.2		9.5	41.7	43.8		9.8	39.8	52.0	
8.9	48.6	15.0	M	9.8	39.2	40.5		7.3	55 10.3	20.2	K	9.0	53.2	27.7		8.5	31 22.9	36.8	K
8.5	53.3	53.1	K	8.6	35 27.0	56.2	Sj	4.8	11.4	10.3	K	9.5	19 10.6	4.1		9.4	51.3	54.5	
9.4	13 41.1	10.2		9.3	36 3.8	17.0		8.3	23.9	14.3	K	9.0	11.9	57.4	K	8.8	32 12.3	20.5	M
9.5	58.7	56.4		9.6	10.7	46.2		8.9	56 7.5	51.1	K	6.7	16.1	7.3	K	9.4	21.6	12.7	
9.3	14 5.6	21.4		9.4	28.1	14.7		10	21.7	45.7		9.4	46.8	46.0		9.4	40.6	11.6	M
9.8	53.1	0.9		8.9	41.8	42.6	M	9.5	26.8	40.6		9.6	20 9.3	19.8		9.3	49.7	23.5	
9.0	15 39.5	20.3		10	37 34.4	15.0		9.0	57 2.6	44.7		9.4	21 2.6	19.8		9.1	51.9	6.4	M
9.6	16 55.9	42.9		9.4	38 23.6	9.1		9.4	59.2	54.1		9.8	7.0	44.3		7.8	53.2	50.8	K
8.4	57.1	2.3	Sj	9.4	36.5	30.6		7.2	58 7.7	7.4	K	9.5	9.3	20.4		9.0	33 12.1	17.7	K
6.8	17 31.4	41.7	K	9.3	59.0	30.0		9.1	12.7	4.0	K	8.8	19.7	39.0	M	9.0	15.8	27.0	K
7.5	57.0	32.1	Sj	8.5	39 16.1	1.0	K	6.1	13.6	19.8	K	9.6	22.9	6.7		9.8	20.1	29.1	
9.8	18 3.1	46.0		8.8	17.4	30.3		9.6	36.5	10.7		9.9	37.7	27.3		8.8	36.0	39.3	M
9.0	46.5	33.7		9.5	26.7	45.6		9.8	37.1	3.1		9.8	22 5.5	13.8		9.1	45.9	11.5	Sj
9.7	56.0	20.6		9.2	30.8	42.9		9.5	59 3.4	9.0		9.2	23.2	56.3		9.5	34 0.1	44.6	
9.0	19 43.0	25.0		9.5	56.8	48.3		9.0	0 4.1	59.7		9.7	35.8	9.8		9.5	13.7	0.9	
10	20 2.6	51.5		9.0	40 21.2	34.8	M	8.9	1 16.8	18.2		9.3	40.4	43.8		9.5	35 2.1	7.2	
6.2	10.4	4.5	K	9.5	30.5	23.1		9.0	31.5	19.1		9.3	24 0.7	31.7		9.5	20.8	44.0	
8.8	20.9	32.1		9.2	41 12.6	24.1		9.1	39.7	9.5		9.5	8.4	45.7		8.9	22.1	58.7	
9.5	21 53.3	11.8		8.8	32.9	46.2	M	7.9	46.3	47.7	B	9.0	13.7	47.2		5.5	37.2	25.1	K
8.3	22 6.5	18.1	K	10	50.1	58.3		9.8	48.6	26.5		8.8	46.9	5.8	K	7.5	40.2	30.7	K
8.4	26.7	45.3	K	9.7	57.3	46.7		9.1	2 0.5	33.3	B	10	25 9.5	51.6		10	48.3	56.7	
9.4	41.7	39.9		9.0	42 3.4	57.8		9.3	27.9	44.9		10	10.0	44.4		9.2	58.7	46.7	
8.9	23 1.5	10.5	M	9.4	28.0	0.1		9.6	45.0	54.5		9.6	16.1	38.6		9.4	36 27.9	29.3	
9.5	24.9	32.6		9.8	39.2	55.6		7.0	4 6.3	45.4	B	7.8	25.6	39.9	K	9.5	37.0	3.5	
9.4	24 11.0	8.6		10	43 5.7	24.9		9.5	5 41.2	7.7		9.1	51.7	24.6		9.0	52.1	16.4	Sj
8.3	24.0	21.6	M	8.9	15.5	17.3		9.0	6 23.8	43.9		9.0	26 9.5	16.8		9.5	57.0	47.6	
9.4	37.5	18.4		9.3	21.0	30.3		8.5	29.6	24.7		9.0	32.5	12.3		9.5	37 32.1	20.9	
9.5	25 7.6	56.1		9.1	44 9.8	30.0		9.5	7 11.0	50.1		9.4	57.6	43.2		8.5	49.2	40.6	K
9.1	9.9	38.4	M	9.8	41.4	41.8		9.6	19.7	51.5		9.4	58.6	44.4		9.5	38 5.6	2.5	
9.5	26 10.3	12.5		8.3	45 10.8	49.4	K	9.4	21.9	53.0		9.5	27 3.9	2.8		9.3	6.3	44.2	
9.5	14.4	31.0		9.6	23.6	41.0		8.0	36.5	31.9	B	4.2	19.0	20.4	L	9.6	6.7	27.5	
9.0	45.1	52.2	M	9.8	27.4	55.6		9.5	44.7	50.7		8.5	36.3	48.2	K	9.0	37.1	34.8	K
9.5	27 2.3	40.8		7.5	39.3	40.4	K	8.8	8 19.5	23.1	M	9.2	42.1	46.4		9.6	40.8	55.6	

4701—4760

m	18h m	s	—8° ′	
7.0	38	43.1	16.1	L
8.9		46.0	4.9	
9.2		50.3	12.9	
9.6		51.2	3.0	
9.5	39	9.2	21.4	
9.5		21.9	59.6	
9.8		22.5	55.7	
9.5		54.8	47.2	
9.4		58.6	2.4	
9.4	40	13.1	10.3	
9.8		29.3	34.2	
9.0		41.9	45.6	K
9.4		44.8	53.0	Sj
7.5	41	4.9	36.9	L
9.5		7.3	43.1	
9.4		15.2	18.6	
7.0		26.0	27.9	L
9.8		37.1	49.3	
9.4		46.9	44.6	
9.5		54.3	45.5	
8.5		58.5	21.1	M
10	42	7.9	58.8	
8.9		9.5	33.1	
9.5		16.4	58.5	
9.8		26.1	41.1	
7.1		27.8	4.1	M
9.8		35.7	38.9	
9.5		39.6	48.7	
8.8		53.4	9.2	
9.5	43	1.6	31.1	
9.2		7.2	14.3	
8.2		20.1	5.9	L
7.2		20.9	10.4	L
9.8		23.4	54.7	
9.4		36.0	0.0	
9.0		45.2	34.2	Sj
9.2	44	8.2	37.4	
9.8		15.7	25.8	
9.4		20.5	4.0	
8.8		24.2	57.0	K
9.0		38.2	30.5	
9.4		48.4	41.4	
9.4		48.6	17.3	
9.6		50.5	36.9	
neb	45	10.0	53.1	
10		12.3	45.1	
9.0		14.7	1.4	K
9.0		26.2	51.0	B
8.9		34.2	44.8	M
9.5		42.1	30.2	
9.0		43.2	11.3	K
9.8		50.5	5.8	
10	46	13.9	9.5	
9.0		19.2	9.2	K
9.7		25.4	17.6	
9.0		26.1	31.0	K
9.7		30.9	20.0	
9.8		43.8	19.8	
9.5		53.7	44.0	
9.5		55.5	22.7	M

4761—4820

m	18h m	s	—8° ′	
8.5	47	10.3	59.3	Sj
9.8		16.7	55.0	
9.0		20.5	46.5	M
9.5		33.6	21.6	M
9.5		52.1	20.6	
9.2		52.7	23.3	M
7.2		57.8	58.6	K
9.4	48	3.7	15.0	
9.8		12.6	32.5	
9.4		13.7	15.5	M
9.1		16.9	5.9	
9.2		23.4	40.1	K
9.0		34.0	25.4	M
8.3		47.3	44.5	K
9.5		48.2	8.6	
7.6		50.8	36.6	K
9.6	49	3.5	38.4	
9.0		4.9	48.5	K
9.8		6.5	36.3	
9.1		6.7	14.2	M
9.2		25.1	13.2	
9.1		27.6	21.2	Sj
9.8		35.8	45.1	
9.4		39.3	44.2	
9.5	50	11.2	37.0	
9.2		19.6	43.9	
9.9		32.3	27.3	
9.2		42.7	8.4	M
9.0		54.0	25.8	M
9.8	51	5.0	57.7	
9.8		5.5	45.4	
9.4		6.2	22.1	
9.4		7.9	31.8	
9.0		10.7	25.9	K
8.5		23.7	21.2	K
10		33.9	51.2	
9.7		38.3	21.3	
9.8		41.2	28.0	
9.6		42.6	34.3	
9.5		52.5	17.4	
9.6		56.8	21.0	
9.9		57.8	35.5	
9.4	52	7.7	12.2	
9.4		9.4	48.0	
9.4		17.3	58.6	
8.5		19.7	35.5	M
9.1		25.8	31.2	M
9.4		37.2	30.8	
8.5		41.1	18.0	Sj
8.8		41.3	19.0	K
9.1	53	1.4	4.1	
9.3		3.7	16.0	M
9.7		22.1	46.4	
9.2		22.4	38.6	
9.0		34.3	6.8	M
9.2		42.3	11.5	
10		48.9	38.8	
9.8		57.9	34.5	
9.7	54	5.3	55.4	
8.1		8.1	11.1	L

4821—4880

m	18h—19h m	s	—8° ′	
8.8	54	17.2	28.6	M
9.4		20.8	16.4	
9.7		20.9	26.8	
9.5		38.5	35.4	
9.5	55	9.7	39.0	
9.3		47.1	47.1	
9.3		55.6	10.3	
9.7	56	12.8	45.3	
9.3		13.5	48.3	WC
9.8		16.2	12.8	
8.8		16.7	22.2	Sj
9.0		17.3	36.5	K
8.5		19.0	46.8	K
9.5		24.7	31.4	
8.6		41.9	55.4	K
7.0		55.1	51.8	K
7.3	57	1.8	20.1	K
9.8		10.9	49.1	
9.2		16.8	28.2	
8.7		37.0	36.6	M
9.1		41.7	44.8	M
9.8		48.3	47.6	
9.8		56.1	54.3	
9.8		57.7	37.6	
9.1	58	35.1	59.1	
9.5		38.0	56.3	
9.5		44.6	42.5	
9.8	59	5.1	5.0	
9.1		9.1	56.3	
9.8		9.2	49.8	
8.9		9.7	4.3	K
9.3		20.8	51.4	WC
9.5		35.8	35.5	
9.5		39.6	44.3	
9.8		46.2	9.1	
9.8		50.7	21.9	
9.1	0	7.3	15.3	
9.0		8.0	58.0	K
7.0		10.0	4.0	K
9.5		13.4	58.0	
9.4		54.2	0.2	
9.5		54.5	31.0	
9.5	1	24.8	25.7	
9.5		29.8	36.0	
9.3		37.8	41.7	Sj
9.7		41.8	43.7	
9.5		52.8	37.5	
9.6		58.3	38.7	
9.8	2	9.3	21.0	
9.5		25.8	24.4	
9.1		43.7	3.4	M
8.8		44.0	27.7	M
9.8	3	6.3	44.5	
9.5		15.4	59.0	
9.9		19.4	20.3	
9.4		20.4	2.3	
8.6		23.8	4.5	M
9.5		49.2	10.0	
9.3	4	3.3	41.6	
9.5		4.1	30.7	

4881—4940

m	19h m	s	—8° ′	
9.1	4	14.8	12.2	M
9.5		15.6	27.4	
9.5		19.2	0.5	
9.0		19.7	58.3	
8.9		25.9	44.2	
9.5		40.0	45.4	
5.7		48.8	10.0	L
9.1		49.3	56.5	
9.5	5	1.8	48.8	
9.5		2.8	18.7	
9.5		18.5	0.5	
9.3		23.8	31.4	M
9.5		32.4	36.3	M
9.8		42.6	49.4	
9.5		43.2	39.0	
9.0		48.8	2.3	Sj
9.4		58.7	34.6	WC
9.4		59.1	41.0	
9.7	6	3.4	24.5	
6.9		21.3	57.8	K
9.3		24.1	53.6	
7.9		34.4	6.5	Sj
8.9		34.6	43.8	
9.7		35.4	57.7	
9.5		43.6	30.5	
8.9		56.6	38.5	M
9.0	7	43.3	52.3	M
9.7		46.3	43.8	
9.4		49.1	49.0	
9.7		56.0	40.6	
9.2	8	7.3	2.1	M
7.5		22.1	56.3	K
9.1		33.5	30.3	M
9.5		45.0	19.3	
9.4		46.4	48.3	
9.5		49.0	23.4	
9.1	9	6.0	7.1	M
9.5		18.6	8.5	
9.5		23.8	6.7	
9.2		51.9	22.0	K
9.2	10	5.0	28.7	M
9.4		12.0	56.0	
9.5		18.6	8.5	
9.5		22.0	56.0	
10		23.4	43.2	
9.5		24.3	10.0	
9.9		26.4	45.0	
10		39.6	1.5	
8.4		56.5	21.2	K
9.2	11	3.9	16.8	M
9.8		4.8	19.5	
9.9		35.3	26.9	
9.3		42.5	42.5	
8.8	12	9.0	48.2	M
9.5		20.5	22.0	
9.2		27.1	19.4	
9.9		40.4	56.3	
9.5		41.5	32.0	
8.5		48.3	29.6	M
9.5		53.5	35.7	

4941—5000

m	19h m	s	—8° ′	
9.2	13	7.6	23.3	M
9.8		24.1	21.5	
9.9		30.0	34.9	
9.4		42.1	22.8	
10		42.6	32.2	
9.5		51.9	31.1	
9.3		56.0	28.0	M
9.4	14	0.9	35.0	
9.2		12.6	16.8	
7.0		28.0	28.1	K
9.5		33.6	8.7	
9.7		43.0	57.1	
9.1		51.7	39.2	M
9.5	15	12.1	3.0	
9.6		12.8	39.5	
9.5		14.2	53.2	
9.6		37.1	57.4	
9.5		44.0	18.3	
9.4		52.0	31.0	WC
8.3	16	0.0	29.7	M
9.8		20.4	48.7	
9.3		26.5	29.2	M
9.5		33.1	4.6	
9.3		41.9	56.3	
9.5		53.4	26.5	
9.0	17	1.0	22.6	K
9.4		6.5	35.6	
9.0		13.1	10.8	M
9.9		18.4	44.5	
9.7		23.9	13.5	
9.9		28.4	44.7	
9.4		50.6	24.1	
9.4	18	1.6	17.2	M
9.3		13.8	51.4	
10		22.4	40.1	
9.1		36.4	52.7	
8.0		41.8	26.8	M
8.9		49.6	32.4	M
8.3		48.6	0.1	K
9.7		54.0	21.2	
9.1	19	0.1	31.7	M
9.1		5.1	6.1	M
9.2		14.5	35.0	M
9.1		18.1	23.4	
9.6		31.2	13.4	
8.8		33.8	28.5	K
8.5		47.8	39.4	K
9.4	20	3.2	39.8	M
9.1		5.3	30.4	M
9.9		24.1	24.5	
9.4		26.4	26.3	
9.8		29.7	48.2	
9.1		35.2	54.4	M
9.1		40.1	3.7	
9.0		47.9	26.6	K
9.8		48.5	52.7	
9.9	21	30.8	55.8	
10		31.6	29.5	
10		35.7	38.7	
9.4		36.5	26.2	M

4726: roth

4993: $35^{s}.61\ 54'31''.6\ B_1$, Ep. 1883.64

5001—5060				5061—5120				5121—5180				5181—5240				5241—5300			
	19h	−8°			19h	−8°			19h	−8°			19h	−8°			19h—20h	−8°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	21 44.2	11.7		9.3	31 50.2	40.2		8.0	42 23.1	57.8	M	9.3	50 46.5	43.8		9.5	59 42.8	6.7	
8.7	57.1	19.0	K	7.3	32 14.2	18.2	M	9.8	26.2	29.6		9.0	58.9	38.9	K	8.9	0 4.8	44.3	M
8.6	22 6.3	33.0	K	9.5	43.5	43.8		9.2	33.6	55.8	M	9.4	51 10.0	4.6		9.8	5.0	37.5	
9.3	6.8	4.3		8.8	43.9	26.9	M	9.8	36.3	23.5		9.5	18.7	59.9		9.6	20.0	36.1	
9.4	8.3	2.7	M	9.8	54.6	21.9		9.5	45.7	35.5		9.1	22.3	5.6	K	9.5	33.9	3.6	
9.1	15.1	49.1	M	8.8	57.2	36.2	Sj	9.1	43 2.7	36.0		7.8	34.4	28.7	K	8.8	38.3	33.6	Sj
9.0	43.5	44.1	M	9.2	59.4	35.0	M	9.3	5.5	18.1		9.9	41.7	46.1		9.1	51.6	58.5	
7.6	50.1	29.0	K	8.8	33 8.3	11.2	M	9.3	6.8	54.8		9.8	46.4	14.8		9.7	1 14.8	35.0	
9.0	23 11.0	13.5	M	9.1	12.9	51.6	M	9.4	15.7	22.1		9.5	58.9	26.1		9.0	42.0	50.1	Sj
10	11.6	40.9		9.9	28.0	50.2		9.3	17.1	51.3		9.8	52 2.4	15.2		9.6	47.5	34.0	
9.7	16.2	37.2		9.5	32.7	0.5		9.5	18.6	53.2		9.4	33.6	54.5		9.0	2 9.0	29.6	Sj
9.5	29.9	9.2	M	9.4	34.2	24.2		9.9	19.4	49.1		9.7	34.5	42.6		9.5	17.1	33.6	
8.9	32.8	47.4	K	8.7	44.7	57.9	K	9.4	44 6.8	15.9		9.9	44.8	31.8		9.2	17.5	43.9	K
9.4	39.1	28.5		9.2	34 11.0	53.7	K	10	14.1	3.8		9.4	55.9	31.1	M	9.4	22.6	39.4	
9.8	41.7	6.0		8.8	40.6	4.5	Sj	9.3	21.7	30.8		9.1	53 0.6	12.8		9.4	24.5	37.9	K
9.4	50.6	17.0	Sj	9.7	54.0	57.3	M	9.6	28.6	50.2		9.0	4.8	49.6	K	9.4	27.7	59.0	
9.6	59.4	58.8		9.2	35 7.5	51.7	K	9.8	36.8	12.2		9.8	7.4	39.2		9.5	36.8	52.8	
9.7	24 38.1	58.7		7.2	11.2	38.4	Sj	9.3	39.3	11.0		9.7	18.1	23.0		9.5	40.0	2.8	
9.9	42.4	57.9		8.0	15.3	40.1	K	9.5	52.1	0.1		9.4	24.3	26.0		9.8	50.0	25.0	
9.1	44.5	13.6		9.0	17.4	4.5		9.5	55.6	44.7		9.0	54 23.4	13.7		9.9	3 5.5	19.4	
10	56.4	11.1		8.4	28.9	30.0		8.2	56.4	3.7	Sj	9.5	27.9	0.1		9.9	8.5	21.1	
9.8	25 3.4	59.2		8.2	44.9	50.6	Sj	9.5	58.6	44.1		9.8	44.4	38.2		9.8	23.1	2.9	
8.8	5.9	18.0	K	9.5	49.6	38.7		9.2	59.8	52.0		9.4	53.9	4.3		9.3	23.6	23.6	M
9.8	27.4	21.1		9.9	51.3	17.3		9.0	45 18.2	38.1	M	10	55 11.5	13.3		9.5	41.4	54.0	
9.5	35.2	59.0		8.2	36 25.5	41.9	Sj	9.3	22.4	18.3		8.1	14.9	5.3	M	9.8	41.5	37.2	
9.9	35.5	26.3		9.7	39.0	20.8		9.5	37.1	53.5		9.2	18.8	22.1		9.7	51.6	39.5	M
9.5	49.7	57.1		9.8	41.0	55.5		9.4	46 5.8	8.4		9.5	32.7	48.4		9.0	53.3	57.5	K
9.0	26 18.4	53.9	M	9.8	45.8	28.0		9.1	12.0	40.9		9.4	42.7	54.1		9.5	4 8.0	23.0	
9.7	24.9	3.6		9.4	51.3	42.2		9.5	14.7	38.3		9.4	56 1.9	17.5		9.5	8.8	37.9	
9.8	35.5	51.4		9.1	56.7	39.7	K	5.8	15.6	56.7	Sj	9.6	3.5	36.8		9.4	18.8	44.2	M
9.0	36.5	48.1	Sj	9.4	58.6	2.0		9.6	39.9	18.1		9.2	16.2	39.8		9.5	19.2	12.9	
9.4	47.5	45.2		9.8	37 2.0	46.9		9.1	41.4	55.0		9.0	27.9	8.4	K	7.0	26.0	31.1	Sj
9.5	27 0.8	3.4		9.2	4.1	54.7	M	9.6	43.5	18.3		9.8	32.9	24.9		9.2	35.7	57.6	M
9.8	13.1	35.2		9.0	8.9	3.7		6.2	46.9	36.1	K	8.8	35.2	45.0	M	9.6	37.5	14.0	
9.1	19.6	22.0	M	8.2	10.6	50.1	K	7.1	47.7	36.8	K	9.5	37.9	23.4		9.3	46.9	9.6	
9.1	27.2	24.0	M	8.5	14.8	17.2	Sj	9.1	54.9	14.2		8.6	57 17.3	40.8	K	9.3	47.5	7.1	K
9.3	32.4	6.3	M	9.6	38 5.0	41.3		9.4	47 5.5	42.4		7.8	24.4	31.0	K	9.5	5 22.8	55.9	
9.5	40.9	3.2		9.0	12.6	45.1	M	9.0	16.0	5.2		8.8	24.6	48.8	K	9.7	25.4	44.4	
9.4	41.2	54.1		9.7	22.6	40.6		10	21.0	46.2		9.1	39.4	4.7	Sj	9.1	33.8	53.0	M
9.2	52.5	42.3		10	22.6	55.6		7.8	22.6	11.0	Sj	9.5	43.7	38.0		9.5	47.7	12.1	
9.3	59.1	22.2		9.6	36.8	35.6		9.5	36.6	39.1		9.8	50.7	25.8		9.5	6 13.6	40.2	
9.7	28 11.4	28.7		9.2	39 11.5	20.3		9.9	36.7	0.2		9.6	58.4	36.1		9.4	23.8	24.6	Sj
8.8	26.6	30.9	M	7.8	17.2	30.4	Sj	9.7	39.8	0.0		8.5	58 5.4	31.9	K	9.4	30.5	26.8	
9.5	33.5	52.8		9.5	53.3	44.5		9.5	42.8	45.8		9.9	8.8	50.3		9.8	50.1	34.1	
9.5	50.4	0.3		9.9	40 15.2	24.8		8.8	46.9	30.4	M	9.6	20.7	53.5		9.6	59.7	42.4	
9.8	52.5	49.3		9.4	20.3	15.2		9.0	47.0	10.2		9.9	21.4	9.3		10	7 24.4	50.3	
9.5	29 0.2	13.9		9.8	22.3	55.4		9.3	51.9	18.7		9.6	22.0	57.9		9.6	33.7	49.6	
9.7	16.8	50.3		9.7	32.3	42.8		9.0	57.3	13.1		9.8	26.2	33.0		8.5	45.0	13.0	Sj
9.3	21.0	16.0		9.4	37.4	59.5		9.1	48 15.4	27.5	M	8.5	26.7	54.1	Sj	9.4	52.0	1.4	
9.0	21.2	22.6	K	9.6	58.1	47.4		9.0	25.3	21.9	K	9.1	37.3	46.9	K	9.8	8 2.3	55.4	
9.5	31.1	17.5		8.9	41 1.2	23.7	Sj	9.1	52.3	17.0	M	9.1	37.4	26.8		9.8	9.1	45.8	
9.8	48.2	18.6		8.8	20.6	14.6	K	10	49 17.4	30.3		9.4	37.7	43.1		9.2	16.0	1.8	
9.7	49.1	3.2		9.7	26.6	48.9		9.3	28.1	58.9		9.5	40.1	4.5		9.1	18.6	17.9	
9.6	54.9	5.9		8.7	32.3	7.4	K	9.4	29.4	12.5		8.8	59.4	27.0	K	9.3	21.1	29.3	M
8.8	30 31.6	38.1	Sj	8.8	36.1	42.3	M	8.8	38.3	28.1	K	9.4	59 0.1	0.9		8.0	21.5	10.2	K
9.4	38.7	22.1		9.5	43.2	18.5		9.5	38.9	18.3		9.0	10.5	24.4		9.5	35.3	48.3	
8.7	31 12.5	45.9	M	9.0	44.0	23.4	M	9.5	55.5	44.4		7.3	14.3	35.8	K	9.6	40.0	26.7	
9.4	24.7	7.6		9.2	44.2	26.6		8.5	50 22.4	24.6	Sj	9.4	27.7	55.8	M	10	40.5	6.2	
9.6	43.7	51.3		9.5	42 6.8	56.6		9.5	26.6	46.0		9.8	29.2	9.0		9.5	44.6	29.6	
9.7	44.4	50.6		9.5	11.6	43.5		9.5	28.8	30.7		9.4	36.0	0.4		8.8	49.2	2.8	K

5301—5360				5361—5420				5421—5480				5481—5540				5541—5600			
	20h		−8°		20h		−8°		20h		−8°		20h		−8°		20h—21h		−8°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.4	8	51.7	41.1	9.5	18	42.3	58.4	Sj	7.3	31	8.5	54.2	Sj	9.4	41	23.9	27.3		9.3	52	24.3	58.2	
9.4	9	45.1	37.6	Sj	8.5		57.5	22.1	Sj	9.5		19.7	27.9		9.4		33.3	4.3		9.8		44.0	42.2	
9.3		52.0	30.5	M	9.0	19	0.7	33.8		8.4		34.3	50.5	Sj	9.7		40.3	46.6		9.1		57.1	21.3	M
9.5		54.1	27.5		9.5		1.5	21.8		8.0		40.2	14.5	B	9.4		47.3	4.2		8.2	53	0.6	54.2	Sj
7.0	10	7.5	30.3	L	9.0		15.9	41.4	M	10		53.7	42.8		9.3	42	4.4	19.0		9.8		15.5	4.7	
9.8		13.5	10.3		8.7		32.6	6.2	L	8.0	32	6.7	5.0	Sj	9.5		6.3	46.9		9.5		17.3	2.3	
9.8		14.1	17.8		9.6	20	6.0	8.7		9.0		15.8	15.6	M	8.7		19.2	1.5	K	9.6		36.4	34.5	
9.2		20.6	22.9	M	10		35.3	5.6		9.5		38.3	11.8		9.4		20.4	16.2		9.5	54	8.7	20.8	
8.5		26.0	46.0	M	9.5	21	2.7	19.6		9.9		39.5	17.9		10		27.2	42.7		10		18.8	28.1	
9.8		27.3	22.2		9.1		6.3	4.7	M	10	33	10.0	47.3		9.5		35.3	44.4		9.6		24.0	9.3	
9.5		43.4	43.8		8.9		27.7	30.1	Sj	8.2		10.3	33.1	L	9.6		36.7	16.6		9.4		42.1	33.5	
8.3		50.1	24.0	L	8.5		28.5	45.7	Sj	9.0		15.1	25.7	Sj	9.5		37.5	47.6		9.5		53.4	52.7	
9.5	11	3.1	13.1	M	10		39.7	15.5		9.7		15.3	33.3		9.5	43	23.5	34.3		9.3	55	3.9	50.3	
9.5		4.3	6.2		9.4		45.5	29.3	M	9.8		34.0	0.3		9.6		31.3	49.2		9.4		21.4	31.6	
8.8		5.0	42.9	M	10	22	21.3	12.8		9.7		34.7	54.0		8.6		34.5	29.1	K	8.5		26.6	21.7	K
9.6		34.0	58.8		9.7		28.8	39.3	M	9.8		49.2	3.8		9.5		43.4	47.6		9.5		31.1	30.7	
10		41.6	0.4		9.5		45.5	45.7		9.5	34	1.8	25.5		9.6		57.8	45.4		9.6		32.5	3.9	
8.7		56.3	53.9	K	9.3		48.5	47.6	M	9.4		5.9	35.6		9.8		58.1	32.8		9.4		53.4	43.4	
9.7	12	11.1	13.1	M	9.6		50.1	45.3		8.0		7.7	7.7	Sj	9.5	44	12.0	3.9		9.6	56	7.3	44.9	
10		25.7	42.9		8.3	23	1.3	31.9	K	10		32.2	41.3		8.7		12.2	2.1	K	9.4		17.2	34.4	
9.3		52.1	17.8		8.8		22.5	46.0	K	9.4		37.5	25.7		9.8		34.5	30.4		9.5		21.3	39.7	
9.8		59.1	31.7		9.8		22.8	31.3		9.5		39.0	16.4		8.3		41.6	36.2	Sj	8.8		24.2	45.0	Sj
8.0		59.9	11.9	Sj	9.3		31.4	56.4	M	9.1	35	9.7	36.7	K	9.2		59.0	18.3	M	9.6		35.6	8.7	
9.4	13	0.9	2.4		8.0	24	15.9	55.1	Sj	9.6		10.0	57.4		9.5	45	1.6	1.0		9.8	57	15.1	22.8	
9.3		17.4	32.4		10		19.8	51.4		9.9		16.6	39.1		9.6		15.3	31.9		9.1		39.1	18.6	
9.3		27.1	32.9		9.7		29.7	47.3		9.8		23.7	4.8		9.4		20.9	13.6		9.8		49.7	27.5	
9.7		39.3	0.8		8.6		37.3	40.8	K	9.7		33.4	3.8		9.4		47.7	5.6		9.8		52.4	48.8	
9.8		47.6	28.4		9.8		42.1	32.9		9.5		35.3	57.0		10		58.1	48.0		8.2		53.4	58.3	K
9.3		49.6	20.1	M	9.4		55.7	4.4		9.7		35.8	19.3		9.1	46	2.4	20.0		9.4	58	20.2	30.2	
8.7		53.1	13.0	L	9.5		59.2	11.2		9.0	36	1.0	54.6	Sj	9.0		7.9	8.8	M	9.7		23.4	45.7	
9.4	14	13.6	15.0		8.0	25	4.8	25.3	Sj	9.2		17.7	1.1		9.0		17.0	31.6	M	9.6		39.1	16.5	
9.8		18.6	22.5		9.5		7.3	17.3		8.8		22.4	6.2	M	9.7		20.1	49.6		9.8		39.6	15.2	
9.6		36.1	18.3	M	9.8		9.1	9.7		9.0		24.8	32.5		9.9		41.0	58.6		9.3		45.2	27.9	M
9.1		38.6	21.2	M	9.4		10.4	5.5		9.1		36.1	22.4	M	9.1		41.2	41.3	K	9.5		57.5	2.2	
9.8	15	1.4	51.9		9.5		11.5	21.1		8.3		37.5	57.2	Sj	9.5		54.6	39.4		9.3	59	20.0	10.0	
9.5		4.1	9.2	M	9.2		41.8	22.3	K	10		43.9	46.9		8.5	47	1.4	43.6	K	8.8		23.6	19.6	Sj
9.4		13.7	16.4	M	9.3		45.9	30.9		10		50.7	42.7		8.5		14.0	20.6	M	9.7		24.8	44.5	
9.4		16.7	16.8	M	9.1		55.2	10.4	M	9.5	37	2.6	10.8		9.4		32.7	19.7		9.6		28.2	28.7	
9.7		42.9	17.2		9.7	26	24.2	11.2		9.4		4.1	2.8	M	9.0		35.5	25.8	K	9.3		32.8	47.8	
8.7		47.6	14.7	Sj	9.9		24.5	10.4		8.0		7.4	31.1	K	9.3		54.4	15.7		8.3		39.6	44.7	L
10		56.6	16.8		9.5		41.2	2.1		9.5		15.7	15.7		10	48	5.7	49.6		7.0		40.6	48.6	L
9.2		57.2	52.5		8.5		54.2	11.0	L	9.1		26.4	44.7		9.7		11.3	3.1		9.2		41.3	44.6	
8.0	16	7.0	3.4	Sj	9.6	27	15.4	39.9		9.4		29.9	27.3		8.3		22.0	16.0	Sj	9.1		48.4	58.3	
9.5		15.6	55.6		9.1		32.1	45.4	M	8.5		37.1	15.5	K	9.9		25.7	40.4		9.5		51.4	41.9	
9.1		17.8	53.1	M	9.4		37.4	3.5	Sj	8.8		41.8	6.5	Sj	9.7		54.1	28.3		9.5	0	0.9	1.4	
9.5		33.2	11.5		9.4	28	11.8	11.7	M	9.0		44.3	40.2	M	9.4	49	6.4	0.5		9.1		1.5	25.8	M
9.5		47.2	3.0		9.8		13.2	41.2		9.0		50.4	16.6	K	9.5		22.0	30.9		10		17.0	40.9	
8.3		58.3	4.4	K	9.2		25.8	12.1	M	8.8	38	2.3	11.2	K	9.4		45.6	25.9		8.5		50.5	48.6	K
8.2		59.7	38.1	M	9.6		53.5	39.4	M	8.3		9.0	58.5	B	7.3		53.5	15.8	Sj	9.3	1	4.7	56.4	
8.7	17	1.4	32.9	M	9.5	29	10.7	9.5		9.5		22.4	31.9		9.5	50	11.2	54.1		9.5		7.2	16.6	
9.4		4.1	31.9		9.5		24.5	55.6	M	9.6		49.3	41.4		9.5		31.4	44.0		9.7		15.5	44.9	
9.8		24.3	7.2		8.8		26.3	23.8	Sj	9.5		55.1	20.9	M	9.5		58.8	10.5		9.7		42.8	47.7	
9.9		30.4	58.1		9.7		30.1	2.3		9.4	39	2.0	0.2	M	9.1	51	8.5	44.9	M	9.8		44.3	28.4	
9.0		30.5	8.7	M	9.5		50.7	42.6		10		2.7	39.5		9.2		29.1	45.5		9.4		46.5	42.0	
9.4		34.4	2.4		9.3		57.2	6.9		9.4		28.9	24.0		8.0		41.9	11.0	Sj	9.4		59.7	26.4	M
9.5		58.1	19.6		10	30	21.0	57.7		8.7		34.6	58.6	Sj	9.4		44.6	37.1		8.3	2	41.7	17.5	Sj
8.9		59.9	46.0	K	8.8		35.8	11.6	M	9.4		41.0	36.5	M	9.5		48.7	57.3		8.3	3	2.7	13.6	K
9.8	18	1.1	50.5		9.3		57.4	4.8		9.9	40	26.2	6.8		9.3		50.8	5.2		9.9		55.8	34.3	
8.7		12.7	12.4	Sj	9.5	31	0.2	37.1		9.4		56.4	29.3		9.6	52	9.0	20.8		8.3	4	2.3	33.0	K
9.1		27.4	52.1	M	9.2		2.7	3.4		9.1		56.9	31.2		9.4		9.5	24.8		9.2		6.7	31.9	M

5318: 55ˢ.89 53′56″.5 B_1, Ep. 1883.64 5348: 57ˢ.68 4′25″.3 B_1, Ep. 1884.62

5601—5660				5661—5720				5721—5780				5781—5840				5841—5900			
	21h	—8°			21h	—8°			21h	—8°			21h—22h	—8°			22h	—8°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	4 26.9	16.9		9.5	21 47.9	6.1		9.9	36 15.7	31.7		9.6	52 5.3	58.7		9.5	7 39.6	38.8	
10	30.3	53.8		9.2	57.9	30.3	M	9.4	36.0	58.8		9.0	41.2	5.1	K	9.1	54.3	23.8	
8.7	33.2	57.5	K	9.3	22 0.9	31.5		8.6	52.1	19.4	M	8.8	54.0	13.9	K	8.3	8 23.1	3.1	M
8.3	58.5	45.2	K	9.4	24.8	19.3		9.5	37 5.6	15.4		9.1	54 16.9	25.3		8.8	37.6	24.5	S
9.7	5 16.4	45.3		9.1	35.4	47.9	K	9.1	11.7	4.8	K	8.5	44.3	21.3	K	4.0	9 11.1	29.9	K
9.9	30.7	58.6		9.5	59.4	45.2	M	9.4	21.1	55.7		9.8	55 4.6	37.4		9.1	26.6	27.5	
9.5	34.2	10.9		9.8	23 41.3	59.2		9.8	27.5	40.3		8.5	11.3	8.4	L	9.0	10 11.5	18.3	
9.5	6 12.2	43.6		9.5	45.3	40.2		8.5	33.6	8.9	K	9.4	14.5	13.5		9.5	14.6	40.4	
9.3	30.9	49.5	M	9.5	46.1	13.4		9.8	52.0	42.0		8.3	53.8	9.1	L	9.4	57.5	0.4	
9.8	7 1.5	0.3		9.6	24 1.1	49.3	M	9.4	55.5	59.5		9.6	57.9	59.2		8.7	11 29.9	1.9	K
8.4	10.9	19.0	M	9.5	5.8	47.8	M	9.5	38 8.1	56.1		8.3	56 0.4	28.7	R	8.6	31.6	31.7	K
9.5	12.4	27.8		9.0	14.0	32.5	M	9.9	12.6	51.0		9.6	28.2	47.8		9.5	36.6	2.9	
7.3	12.6	56.9	K	9.3	26.5	24.1		9.3	27.7	24.2		9.4	54.0	57.0		9.7	12 4.5	18.5	
9.3	8 7.1	40.6		8.8	25 21.4	51.4	K	8.3	39 2.0	40.2	K	8.8	57 45.3	18.1	M	9.0	6.7	24.4	Sj
9.5	9.7	32.4		9.1	27.0	35.9		9.5	7.0	45.7		10	48.6	26.5		6.2	33.7	32.5	L
9.2	12.2	37.8	M	9.8	56.6	13.6		9.0	7.9	36.2	K	8.0	53.4	24.1	K	9.5	51.1	14.5	
8.0	59.6	15.2	Sj	9.8	26 5.1	44.5		8.9	38.6	24.0	K	9.7	58 32.2	43.3		9.0	13 34.2	23.7	
9.6	59.9	18.8		9.8	23.8	50.2		9.1	50.0	44.1	M	9.3	41.4	51.5		8.5	14 4.6	20.0	M
9.5	9 12.0	42.7		9.3	34.8	45.5		8.0	56.6	19.9	K	9.3	59.5	37.1		9.5	19.8	16.9	
9.3	15.5	0.4		9.6	39.0	23.4		9.8	40 5.4	37.4		9.5	59 4.5	18.0		9.5	31.4	1.7	
9.1	16.5	53.4	M	8.6	39.6	13.2	M	9.5	24.5	59.3		9.8	23.2	45.1		9.0	38.6	11.6	WC
9.7	28.1	6.2		8.3	42.3	51.5	K	9.8	32.1	20.5		9.8	23.3	22.9		9.0	53.1	10.8	K
9.0	47.4	26.9	K	9.4	47.0	3.1		8.5	41 0.6	2.3	M	9.8	24.7	50.0		9.2	57.7	22.9	
9.2	47.6	10.8	M	8.2	53.5	47.9	K	9.8	31.5	2.3		9.7	47.5	16.2		9.7	16 41.9	35.1	
9.6	10 25.1	21.6		8.0	57.5	2.1	Sj	9.4	51.8	28.8		9.1	48.7	55.3		8.9	56.0	50.5	
9.3	52.2	38.9		9.1	27 0.5	44.3	M	8.3	51.9	59.1	K	8.6	0 16.7	3.5	M	9.5	17 45.5	4.0	
9.5	11 16.7	29.1	M	9.5	6.7	1.6		9.5	42 3.2	17.7		9.0	24.4	38.9		9.4	18 2.0	40.8	
9.4	57.0	52.0	M	9.5	10.4	15.9		9.1	36.1	56.7	M	9.3	32.3	13.6		9.2	7.7	27.6	
9.0	12 18.8	44.0	Sj	9.2	46.5	4.0	Sj	8.8	57.3	27.6	K	9.0	43.9	19.0		9.3	11.7	26.2	
9.8	59.7	22.7		9.5	28 23.9	10.1		9.3	43 2.8	47.5		9.2	44.6	9.1	K	9.8	23.8	57.8	
8.2	13 32.5	52.2	K	9.2	35.4	51.5		9.1	3.3	51.9	L	9.0	54.5	59.8	K	9.8	32.1	21.7	
9.0	36.7	46.2	M	10	36.2	40.1		9.5	10.5	27.8		9.5	57.0	28.7		9.5	46.3	41.9	
9.4	59.2	44.3		9.4	40.1	33.3		7.8	21.8	35.0	K	9.7	1 3.7	35.0		7.0	57.9	6.7	B
8.2	14 12.6	8.4	Sj	9.5	41.0	49.8		9.4	22.5	37.7		9.2	6.5	23.9	M	9.6	19 5.8	5.1	
9.0	46.9	7.3	B	9.9	29 11.2	17.7		8.7	53.1	5.0	K	9.8	27.1	47.8		8.8	20 2.4	58.6	
9.5	47.1	24.0		8.3	24.8	27.9	M	9.2	44 29.1	1.6	K	8.8	44.5	24.4	K	10	7.9	23.7	
9.5	15 22.2	14.1		9.0	27.0	10.4	K	8.8	38.9	58.6	K	7.0	47.9	53.7	K	9.6	13.7	15.0	
9.2	31.1	56.1	M	10	31.9	52.8		9.4	39.1	40.4		6.5	51.2	14.7	B	9.4	46.6	46.0	
9.5	40.1	56.8	Sj	9.3	54.6	23.2	R	9.6	45 8.1	2.2		10	2 7.4	21.5		9.6	46.7	29.5	
9.5	50.0	0.7		9.5	57.3	24.4		9.2	46 18.0	18.0		10	8.8	44.3		9.5	21 41.7	51.0	
10	51.5	7.0		5.0	30 2.3	30.0	L	9.3	19.3	25.6		9.6	46.7	42.8		9.1	48.3	4.5	M
9.7	16 22.6	51.5		9.5	35.8	25.1		9.5	20.9	57.9		9.8	54.9	46.4		9.3	50.3	3.9	
9.8	45.7	16.4		9.0	43.9	11.4	Sj	9.5	35.9	59.7		9.5	57.5	57.3	Sj	9.4	51.7	54.3	
9.0	55.9	32.4	M	9.3	48.9	50.5		8.5	52.2	11.5	Sj	9.8	3 8.2	35.7		9.8	22 12.6	59.5	
8.0	17 11.4	48.1	Sj	9.4	31 0.5	20.2		9.4	47 33.9	3.8		9.1	26.6	43.9	K	9.1	25.8	8.6	M
9.8	13.6	56.8		9.1	17.9	55.5	K	9.5	39.9	59.3		9.3	34.7	31.5		9.5	33.2	57.7	
9.5	30.9	38.1		9.7	29.9	42.9		9.1	48 7.7	11.8	R	9.4	34.9	43.6	M	9.2	47.8	45.1	
9.2	58.8	26.5	K	9.0	51.0	51.8	K	9.8	29.8	55.1		9.6	48.0	23.5		7.3	55.2	51.0	K
9.5	18 1.6	31.3	K	8.7	32 8.1	52.9	K	9.7	42.0	17.7		9.6	4 38.5	41.5		9.1	56.3	27.4	K
8.2	18.1	54.4	K	9.5	8.2	6.8		9.0	48.7	14.9	M	7.0	56.5	43.6	K	9.5	23 9.3	20.7	
9.8	55.9	27.3		9.4	33 2.6	25.5		9.3	58.9	46.0		9.6	5 2.0	52.7		10	10.9	34.0	
9.5	19 8.8	19.3		9.5	31.8	26.0		9.7	49 28.8	10.5		9.8	27.4	20.4		9.9	25 39.5	45.9	
9.0	27.9	38.0	Sj	9.6	34 4.0	54.9		9.5	50 11.3	35.3		9.1	48.0	56.7	Sj	9.5	52.4	36.7	
9.7	44.3	7.3		9.8	10.0	8.0		9.0	41.2	15.4	K	8.5	54.6	5.3	K	9.6	54.8	44.9	
9.3	58.6	47.1		9.5	20.3	26.0		9.5	44.8	33.6		8.9	6 4.5	31.8	S	9.6	26 41.1	0.1	
9.5	20 0.1	39.6		9.0	52.2	24.9	K	9.5	47.4	18.2		9.5	9.5	46.2		9.6	27 23.4	38.7	
7.8	1.1	59.4	Sj	9.3	57.1	24.1		9.5	53.5	59.0		9.8	13.0	31.7		9.9	25.9	33.6	
10	33.3	17.1		9.8	35 37.0	51.1		9.5	51 6.7	55.3		9.8	17.4	37.1		9.9	32.4	35.8	
10	21 2.3	56.4		8.2	44.5	4.2	K	9.4	28.2	8.6		9.6	7 14.5	6.2		10	32.8	39.8	
9.1	3.8	45.5	M	9.5	59.9	2.2		9.2	30.3	32.3		9.0	31.2	46.3	K	9.5	47.8	44.7	

5901—5960					5961—6020					6021—6080					6081—6140					6141—6200				
	22h		−8°			22h		−8°			22h—23h		−8°			23h		−8°			23h		−8°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.8	28	10.8	46.9		8.5	42	40.5	13.4	Sj	7.0	58	20.4	42.7	K	8.8	10	5.2	43.7		7.3	27	34.9	28.8	
8.2		16.9	5.3	K	9.4	43	3.2	15.0		9.1		21.2	32.0	WC	8.2		17.3	20.0	K	6.3	28	3.6	16.2	
10		17.4	20.8	B	9.2		4.3	43.8	K	9.4		33.6	45.3		8.7		33.7	5.8	K	9.8		13.7	58.2	
9.6		22.7	59.6		7.7		13.5	4.7	K	9.5		42.7	22.4		9.0		39.2	10.4	K	9.6		20.0	43.6	
7.0		41.5	24.6	B	9.8		28.6	56.7		7.8	59	39.3	28.5	Sj	8.3		50.7	13.5	K	9.5		36.7	53.5	
10		50.3	55.9		9.2		47.7	1.1	R	9.7	0	4.8	21.3		9.8	11	3.9	43.4		9.5		42.3	31.0	
7.7	29	24.5	18.6	B	9.4	44	6.7	2.8		9.4		12.3	32.8		9.4		31.5	38.0		9.5		43.4	36.0	
10		27.5	4.4		4.2	45	3.3	20.9	Sj	9.5		38.4	35.7		9.3		47.4	58.1		10	29	42.6	31.2	
9.4		31.8	9.4		9.2		20.6	59.3		9.3		46.7	50.5		10		48.6	50.5		9.5		52.1	16.4	
10		32.0	28.3		10		24.2	19.0		8.3		51.4	3.0	K	9.8		58.3	26.0		9.3	30	9.3	58.2	
9.8		57.8	58.7		9.8		25.9	43.0		9.7	1	16.3	26.6		9.5	12	23.4	9.7		10		10.4	53.6	
6.8	30	46.0	39.0	K	9.0		25.9	54.3	M	10		28.8	17.4		9.5	13	0.5	35.9		8.9		31.7	44.8	
9.4		48.5	24.8		10	46	5.0	35.9		10		34.3	46.3		9.5		1.2	17.1		10		32.9	40.8	
9.5		59.5	5.3		9.0		12.8	9.5	L	8.1		40.2	6.0	K	10		20.4	48.7		9.8		51.7	20.8	
9.9	31	22.0	22.3		9.1		24.0	48.9		10		55.4	54.0		8.6	14	9.6	53.4	K	9.7		56.1	36.8	
10		42.0	23.4		9.0	47	15.0	46.9	Sj	9.7	2	5.8	39.5		8.9		44.5	50.7	K	10	31	1.9	43.3	
10		53.3	42.5		9.8		21.7	17.0		8.8		34.3	50.8	K	9.0		59.6	1.9		9.1		9.0	35.8	
8.0		54.5	21.4	B	9.8		31.4	34.1		9.1		35.0	56.4	K	10	15	24.6	46.4		9.0		48.7	46.8	
9.5	32	21.4	51.1		8.5		36.1	18.5	Sj	10		37.8	26.1		9.8	16	1.2	3.9		9.3	32	1.3	19.0	
9.6		21.5	35.0		8.7	48	11.0	35.4	K	7.7		51.1	35.5	Sj	10		20.4	0.0		9.4		7.4	10.1	
9.5		33.1	15.4		9.3		26.4	9.3	K	9.8	3	11.1	22.1		9.3		24.0	33.9		9.4		11.3	19.9	
9.8	33	23.0	5.6		9.5		31.2	1.3		9.2		17.8	34.7		9.8		34.6	13.6		9.5		27.3	24.7	
10		31.0	13.5		10		36.7	42.6		9.2		21.4	25.9	M	7.8		35.3	20.4	K	9.7		55.4	31.4	
8.7		48.0	38.6	K	9.6	49	5.8	36.4		10		34.5	5.8		9.8		50.1	14.1		9.5	33	1.6	51.6	
9.8	34	38.0	49.3		9.1		40.0	20.7		9.3		38.8	58.7		10		53.5	50.4		8.8		3.3	22.7	
9.1	35	25.5	53.1	K	9.1	50	5.6	50.6	Sj	10		53.7	38.2		8.8		54.8	58.8	K	7.0		19.4	42.8	
9.9		29.6	39.5		9.5		8.5	8.0		10	4	10.3	50.9		9.4	17	25.0	7.7		9.5		52.2	14.9	
9.5	36	6.6	15.4		9.5		37.9	4.2		10		55.3	6.2		9.7		26.6	58.1		9.9	34	19.9	26.7	
10		25.2	33.0		8.8		56.1	31.0	Sj	9.2	5	24.3	56.5		9.5		29.4	31.1		9.1		32.4	25.8	
9.5		43.1	41.6		9.5	51	23.7	33.9		10		24.4	0.9		9.5	18	10.4	14.6		9.8		37.9	56.2	
9.5		56.5	53.0		8.5		26.1	59.5	K	9.4		36.0	5.8		8.8		12.7	37.6	K	9.5		53.8	54.7	
8.3	37	1.2	22.5	L	10		42.3	45.7		9.3		39.8	57.8		9.1	19	3.0	33.6		9.7		57.1	41.9	
9.1		3.1	35.4	Sj	9.1		44.2	49.4		9.5		45.4	52.7		10		7.6	13.7		9.4		57.7	17.9	
9.3		18.7	3.3		9.5		46.5	20.9		8.2		50.1	46.7	Sj	9.9		28.1	39.0		9.0	35	12.2	0.6	
8.6		32.2	19.6	K	10		58.4	54.9		9.7	6	8.3	29.5		9.0	20	30.1	59.3		8.5		35.4	18.3	
9.8		46.1	20.8		8.7	52	8.5	10.2	M	9.7		8.7	27.0		8.5		40.8	18.9	K	9.1		51.3	2.8	
10		47.0	52.9		9.3		58.2	35.7		9.5		25.3	33.1		9.6	21	25.5	37.9		9.1	36	2.6	43.5	
9.8		48.0	41.1		10	53	47.5	3.1		10		34.4	14.8		8.0		27.2	12.0		9.1		11.2	8.1	
10	38	25.2	39.6		10	54	13.6	12.9		9.0		46.2	28.1		8.8		59.6	36.4		8.5		15.2	8.3	
9.3		31.1	17.2		10		16.1	42.0		9.7		51.3	37.3		10	22	16.7	9.1		9.5	37	3.0	57.4	
10		45.9	58.2		9.9		24.8	56.5		10		51.8	26.4		9.8		17.4	47.9		9.8		10.0	44.3	
9.0		49.2	34.8	K	9.8		37.1	21.4		10	7	3.4	45.9		9.6		21.7	11.1		9.1		13.9	23.7	
9.5	39	20.7	9.2		8.5		37.7	30.1	M	9.1		4.8	52.6		9.7		27.2	4.6		10		22.0	4.8	
10		25.2	0.3		9.8	55	4.8	28.8		9.2		13.8	53.2		9.0	23	0.3	4.8		9.7	38	23.6	51.8	
9.0		29.0	55.6	K	9.4		13.0	36.0	WC	8.0		18.3	29.3	M	9.1		4.1	33.4		9.6		39.4	53.1	
9.7		38.0	0.3		9.3		16.0	48.7		9.2		25.1	13.8		10		17.2	57.5		10	39	17.5	2.8	
9.0		51.7	11.8	Sj	9.3		27.4	22.5		9.4		33.4	46.4		10		26.4	51.9		9.8		44.8	31.2	
9.8	40	5.2	39.8		9.8	56	20.7	31.7		9.2		39.0	2.3		9.5	24	4.5	31.7		9.0		46.6	32.0	
9.6		12.7	7.5		8.3		22.6	50.4	Sj	9.8		50.0	5.2		9.1		50.0	33.0		9.2		50.9	53.8	
9.1		23.8	15.0	M	9.5		29.8	38.4		9.6		52.9	58.3		8.9	25	16.3	49.7	Sj	9.3	40	31.5	24.5	
9.5		32.9	48.4		9.6		33.7	18.8		9.5	8	43.7	11.9		9.9		38.2	7.8		9.2		38.0	24.5	
8.0		47.6	52.2	K	9.0	57	0.2	30.7		9.3		54.9	29.3		9.8		52.6	57.0		10		38.9	21.2	
9.5	41	3.7	20.7		9.8		3.6	9.7		8.5		55.5	57.0	Sj	9.6		57.7	52.8		9.7		55.8	56.8	
9.3		7.7	13.1	M	9.1		4.9	53.7		9.2	9	12.5	59.4	R	9.8	26	20.7	22.2		9.0	41	18.1	57.6	
10		8.4	54.5		9.6		11.4	57.3		9.0		15.1	22.5	B	10		25.3	15.1		9.5		19.2	33.4	
9.5		15.7	1.1		9.9		15.5	5.9		5.5		19.9	31.0	K	10		44.7	16.8		9.0		21.8	13.5	
9.8		18.8	54.2		9.8		34.1	8.2		8.5		21.0	51.9	Sj	10		45.6	37.0		9.4		28.8	26.3	
9.6		24.6	59.9		5.8		35.7	28.4	L	9.8		28.5	39.8		10		47.8	28.9		9.8	42	8.3	36.4	
9.1		37.0	25.5	M	7.5		45.8	32.2	L	9.8	10	4.0	30.5		9.9	27	10.2	55.3		9.6	43	12.4	47.0	
9.5		51.8	24.3		8.9	58	2.2	52.9		10		5.0	39.4		9.2		13.2	51.7		9.8	44	31.5	15.5	

5968: roth

6201—6210

	23h	−8°	
m	m s	′	
9.8	44 46.4	38.3	
9.3	45 2.6	19.8	
9.8	11.6	53.4	
9.8	22.5	44.1	
9.1	36.8	37.0	
9.5	46 0.6	53.1	
9.2	25.3	50.7	
9.3	27.9	16.0	
9.8	47 9.1	29.8	
9.1	31.8	4.3	

6211—6220

	23h	−8°	
m	m s	′	
9.8	48 31.4	34.7	
9.8	41.0	16.6	
7.8	49 34.5	10.0	K
9.5	50 4.9	8.2	
8.0	20.0	10.8	K
9.8	24.9	37.7	
9.3	36.1	40.1	
9.8	43.0	45.0	
9.2	43.6	18.1	
9.6	51 34.8	58.9	

6221—6230

	23h	−8°	
m	m s	′	
9.8	51 50.1	6.8	
8.0	52 10.4	36.7	K
9.9	19.4	29.1	
9.7	25.9	42.5	
9.2	33.0	36.7	
9.8	50.5	34.1	
9.0	53 20.2	18.2	
10	54 2.4	59.4	
10	13.8	56.6	
9.7	23.6	46.4	

6231—6240

	23h	−8°	
m	m s	′	
8.1	55 38.0	37.7	K
10	38.5	10.5	
8.8	45.9	31.2	K
10	56 23.4	31.4	
9.4	44.2	13.3	
9.6	50.9	33.2	
9.7	57 4.3	5.3	
10	4.8	31.4	
9.7	6.1	9.3	
8.5	14.2	59.7	K

6241—6247

	23h	−8°	
m	m s	′	
9.0	57 32.2	4.9	Sj
6.7	58 3.5	28.2	K
9.0	14.3	43.0	
9.8	46.0	45.7	
9.8	59 2.0	42.6	
10	18.7	53.6	
9.9	57.7	8.5	

Zone −9°

1—40

	0h	−9°	
m	m s	′	
9.8	0 11.0	45.0	
9.8	15.4	21.0	
9.0	35.2	17.1	
9.4	50.1	31.6	
6.5	52.9	37.7	K
8.5	1 37.5	1.2	K
9.5	44.0	2.1	
9.1	2 3.4	17.7	
9.5	9.4	52.7	
10	10.2	4.1	
9.7	19.3	9.5	
9.8	20.7	3.2	
7.3	38.6	47.1	K
9.6	43.9	5.0	
9.6	45.0	38.8	
8.9	52.0	33.2	Sj
10	3 5.7	52.8	
9.6	9.2	4.8	
9.3	19.0	29.5	
9.4	49.5	41.2	
9.9	59.3	7.8	
9.1	4 0.6	10.0	
8.5	58.0	31.3	K
9.5	5 6.1	29.2	
9.5	26.1	45.3	
9.4	45.4	1.8	
9.4	45.7	54.4	
9.1	54.8	8.1	
9.7	6 24.6	34.0	
7.9	53.2	38.6	Sj
9.8	8 8.7	38.3	
8.3	27.5	41.0	
9.4	38.8	33.7	
9.5	42.3	2.7	
9.8	46.6	21.2	
9.4	48.9	10.0	
9.3	9 25.1	25.2	
9.0	45.5	20.8	
9.5	10 10.5	15.0	
9.4	16.9	29.5	

41—80

	0h	−9°	
m	m s	′	
8.8	10 39.6	18.5	
9.6	51.8	26.0	
9.8	11 8.7	58.0	
9.0	30.0	46.5	
9.5	48.9	2.6	
9.3	51.4	41.8	
9.5	12 1.0	39.6	
3.9	3.1	37.6	K
8.5	42.9	51.9	K
9.4	49.0	57.1	
8.7	56.2	42.4	K
9.5	13 34.9	7.5	
8.6	39.3	54.8	K
8.9	51.0	5.1	R
9.0	57.5	32.2	
9.2	14 17.8	33.9	
9.8	28.4	40.9	
9.4	31.9	1.1	
9.1	38.4	28.5	
8.9	15 52.7	25.7	
9.5	16 6.0	45.3	
10	26.4	45.2	
9.4	32.1	47.8	
9.3	55.7	55.6	
9.8	17 1.6	11.8	
10	3.6	58.6	
9.3	13.8	32.5	
9.0	21.5	26.1	K
9.5	18 30.2	10.2	
7.7	30.7	9.3	Sj
9.3	39.3	58.5	
9.5	44.3	58.3	
9.8	45.5	38.0	
9.2	19 10.6	17.4	
10	17.4	24.0	
9.6	32.8	14.3	
9.4	45.3	44.5	
9.3	52.9	58.8	
8.0	58.1	27.3	K
9.6	20 9.8	49.0	K

81—120

	0h	−9°	
m	m s	′	
9.2	20 25.2	29.8	
10	33.6	3.8	
9.8	57.0	29.9	
9.7	21 0.8	26.8	
10	13.0	50.0	
9.2	18.5	22.1	
9.4	33.1	39.5	
9.6	39.0	21.0	
9.4	22 3.8	10.7	
9.5	14.4	56.5	
10	23 19.4	56.7	
9.2	40.3	38.0	K
10	45.6	29.3	
10	57.1	33.7	
10	24 15.6	29.3	
9.7	25 15.8	33.5	
8.8	16.0	50.1	K
9.5	33.4	52.3	
9.5	44.2	41.0	
10	45.2	11.3	
9.7	26 4.6	26.6	
9.5	22.7	38.1	
8.9	36.8	31.2	B
9.5	27 4.3	3.0	
9.8	9.0	56.0	
8.3	17.1	5.7	R
8.9	22.8	16.7	
neb	24.9	11.8	
8.8	28.7	40.4	K
9.9	33.7	25.4	
8.5	28 21.7	0.5	K
9.1	39.3	36.7	
9.2	29 1.7	15.1	K
9.4	41.1	28.4	
9.8	48.7	54.2	
9.8	59.7	27.5	
8.0	30 17.6	52.2	Sj
9.8	23.3	4.2	
9.1	41.8	38.8	
9.4	57.3	40.4	

121—160

	0h	−9°	
m	m s	′	
9.5	31 6.8	25.2	
9.1	12.0	5.3	K
9.8	20.9	46.2	
10	29.8	41.7	
9.3	58.6	53.1	
10	32 11.1	46.3	
10	36.5	7.1	
10	42.6	12.9	
8.7	51.0	43.7	
9.6	33 15.7	59.5	
9.4	34 8.6	48.0	
9.1	14.8	17.0	
9.5	45.0	46.5	
9.3	55.4	20.9	
9.8	58.2	21.8	
9.2	58.6	58.0	
9.4	35 27.5	8.8	
9.5	52.2	34.6	
9.6	36 10.8	15.5	
9.3	36.9	50.9	
9.3	37 26.5	0.9	
9.5	47.0	39.5	
9.5	38 12.0	11.2	
9.4	16.0	17.3	
9.5	31.1	13.0	
9.4	44.5	32.1	
10	49.0	43.5	
9.3	49.2	33.2	
10	51.3	50.8	
8.9	53.5	7.4	
9.8	39 21.4	15.5	
9.3	58.6	7.6	
8.8	40 8.2	12.7	
9.4	29.1	15.0	
9.6	43.5	6.3	
9.3	56.7	22.0	
10	41 24.7	5.5	
10	40.2	40.8	
9.4	40.9	51.4	
9.3	54.7	24.6	

161—200

	0h	−9°	
m	m s	′	
9.5	42 42.3	17.9	
9.8	43 10.1	8.5	
9.4	13.0	59.2	
9.4	14.7	16.7	
9.8	19.1	1.7	
9.6	20.6	21.8	
9.3	36.1	53.1	K
9.5	56.4	23.2	
9.3	59.6	5.5	
9.3	44 13.9	2.2	
7.6	17.9	36.5	
10	24.5	31.0	
10	25.8	3.6	
9.8	45 24.9	49.8	
8.8	26.7	7.2	Sj
9.1	37.8	42.5	
10	40.2	51.4	
9.8	46 9.9	21.7	
9.8	22.8	13.3	
8.5	23.8	5.8	K
6.2	59.0	31.2	K
9.5	47 48.3	27.2	
9.4	48 14.0	30.0	
9.3	26.6	24.3	
9.8	30.3	11.8	
10	49 2.0	30.9	
9.9	7.4	15.1	
9.2	8.8	59.6	
9.5	23.8	6.8	
10	41.9	13.4	
9.6	50 6.7	23.9	
9.7	26.5	19.1	
9.5	42.3	3.0	
9.9	52.7	23.9	
9.5	51 37.8	25.0	
7.0	52 32.0	6.2	K
8.8	51.7	36.6	K
9.8	57.4	7.5	
9.7	58.3	33.8	
9.4	53 5.4	43.0	

201—260				261—320				321—380				381—440				441—500			
	0h—1h	−9°			1h	−9°			1h	−9°			1h—2h	−9°			2h	−9°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
10	53 28.1	55.9		9.8	14 6.6	28.5		8.8	34 48.8	31.2	K	9.3	53 27.2	8.2		9.4	12 5.0	2.7	
9.3	44.5	18.7		9.1	23.9	23.5	R	8.3	52.0	5.7		7.3	37.8	10.6	K	9.5	57.9	26.5	
9.4	51.5	55.2		9.8	25.4	11.6		10	54.9	31.5		9.3	51.4	44.9		9.5	13 23.3	50.6	
9.5	54 43.0	56.4		9.3	15 15.6	47.8		7.0	35 19.1	23.9	K	9.6	54 53.7	12.0		10	34.2	49.3	
9.0	49.2	38.3		9.1	22.4	16.0		10	25.5	1.0		9.1	55 24.3	55.4		8.5	50.9	24.0	
9.1	55 4.9	10.0		9.1	50.0	11.5		9.4	28.0	3.9		10	44.8	16.3		10	14 33.9	56.9	
9.8	56.1	43.9		9.0	16 2.4	48.2		9.0	41.8	48.0		9.1	52.4	37.0		9.3	34.4	28.3	
10	56 18.6	53.7		9.8	30.2	33.0		9.1	36 13.3	8.3		9.0	52.8	20.2		10	44.4	56.3	
9.7	28.7	33.2		9.3	17 6.5	15.1		7.8	38.8	23.5	Sj	9.0	56 2.3	56.2		9.8	52.8	53.5	
8.2	34.6	54.3	Sj	9.4	33.3	23.4		9.1	59.1	21.0		9.5	15.3	29.1		9.0	56.5	35.5	
9.1	45.1	24.8		9.5	18 3.7	51.2		9.7	37 29.5	33.6		9.0	21.5	17.8		9.1	15 36.4	18.7	
9.6	54.4	25.4		7.0	40.0	15.8	K	10	38 3.0	52.7		8.6	31.2	12.2		9.0	50.7	7.0	
9.1	57 3.8	28.9	K	9.8	50.9	29.6		9.9	25.1	20.9		9.5	39.0	26.1		9.3	57.4	16.0	
9.8	14.0	7.3		9.7	53.3	12.6		10	27.9	53.6		9.8	46.8	17.8		9.5	58.3	8.9	
9.8	24.5	7.3		9.4	19 17.9	11.7		9.6	39 11.4	52.5		9.0	57 14.0	49.5		8.3	17 8.9	16.3	
9.5	26.2	15.7		8.5	33.2	20.3	Sj	9.8	31.5	13.4		10	40.9	59.2		8.4	44.7	39.9	
9.8	27.6	56.8		9.4	20 4.4	57.4		9.6	33.1	22.1		8.5	55.1	17.7	Sj	9.0	18 20.8	49.1	
7.5	58 41.1	26.3	R	9.7	35.0	6.0		8.5	56.4	9.6		9.3	58 16.7	44.0		10	25.1	36.6	
9.6	59 22.2	52.6		9.2	36.8	32.7		10	40 32.2	39.5		8.7	18.3	30.4	K	8.6	40.0	53.2	
8.2	26.2	28.2	Sj	9.8	50.7	0.4		10	33.0	53.4		9.1	41.1	38.9		9.7	47.8	15.3	
7.8	0 30.0	0.4	K	9.7	54.5	1.5		9.8	43.9	8.7		8.5	59 4.9	53.5		8.0	49.9	54.4	
10	52.0	57.6		9.2	54.8	53.0		8.2	41 3.0	58.3	K	9.4	38.9	27.7		8.7	19 23.2	34.1	
10	1 15.6	50.3		9.1	21 9.5	8.1		8.5	40.9	5.0	K	6.7	52.0	17.9		10	20 10.8	10.7	
10	38.2	54.8		9.5	22 4.3	18.9		9.4	42 52.6	36.0		9.1	0 46.7	44.5		9.3	14.8	31.0	
9.5	39.0	22.1		9.3	26.0	31.8		9.8	43 31.1	14.7		9.3	55.7	33.1		10	43.9	50.4	
9.7	2 35.2	24.7		9.4	29.5	33.0		9.2	44 6.7	58.5		9.4	1 8.7	50.6		10	21 28.0	38.7	
6.3	56.1	40.7	Sj	9.6	58.4	47.6		9.6	35.7	20.5		10	19.5	20.6		8.5	36.7	24.2	
9.5	3 23.6	19.7		10	23 22.5	46.0		9.5	45 4.1	33.3		9.5	25.1	57.3		9.8	22 30.0	33.9	
9.3	31.3	28.4		10	31.9	1.5		9.5	38.2	23.0		9.7	37.4	29.1		10	23 17.1	47.2	
10	33.0	25.9		10	39.5	44.8		10	44.2	36.0		10	2 2.5	51.9		9.4	20.8	38.1	
10	41.4	59.5		9.5	45.1	4.4		9.9	46 4.0	6.4		9.5	5.9	17.5		9.4	40.6	24.4	
9.7	57.7	7.1		9.9	24 18.8	46.5		9.1	16.0	33.3		9.2	24.9	50.1		9.5	51.2	45.5	
9.5	4 6.9	26.9		9.8	19.6	42.9		8.3	47.3	22.0	Sj	9.0	39.4	23.3		10	24 23.1	42.6	
9.5	24.4	44.0		10	23.7	54.2		9.5	47 24.7	22.5		8.0	3 6.3	25.8	K	9.8	25 12.5	21.8	
9.5	24.5	34.3		10	25 10.4	48.8		9.0	39.6	11.1		9.4	7.4	18.7		9.6	14.8	5.7	
10	5 8.0	9.5		9.8	17.9	32.3		8.2	48 21.6	19.1	K	9.5	10.7	32.8		8.9	18.6	36.4	
8.0	11.4	59.4	K	9.3	19.2	43.8		9.5	27.1	10.7		9.0	4 6.7	26.0		9.4	31.5	7.5	
10	17.0	23.8		7.0	49.6	45.8	K	10	49 16.4	28.5		9.1	10.0	54.1		8.2	48.4	20.7	
9.0	26.6	36.6		9.5	55.2	14.7		9.3	33.6	6.8		8.7	37.1	36.9	K	10	49.5	26.2	
9.0	40.5	9.9		9.8	55.8	1.0		9.8	41.8	31.8		9.6	50.4	10.2		9.3	26 17.4	38.7	
8.8	6 27.2	4.9	Sj	8.0	27 5.2	11.9	Sj	9.5	47.1	32.1		9.8	51.9	29.2		9.1	27 15.2	20.0	
9.8	31.8	12.5		9.2	16.6	3.6		9.5	57.5	42.2		10	5 10.8	49.7		10	59.5	59.0	
10	7 0.1	37.4		9.7	25.5	15.8		9.8	50 21.2	13.1		9.5	25.1	23.6		9.3	28 16.7	21.6	
9.7	9.8	45.4		9.8	28 9.4	2.9		9.0	39.3	23.3		9.6	36.8	1.2		6.7	18.7	59.1	
10	10.0	8.1		9.4	11.6	31.8		9.2	58.7	15.8		9.4	6 4.6	55.0		9.1	35.9	25.5	
8.9	43.4	54.1	K	9.0	29 8.4	37.2		9.5	51 1.7	17.2		9.5	19.2	25.4		8.5	44.6	12.2	
9.8	8 14.6	33.8		9.1	32.1	7.3		8.8	5.0	9.2		8.4	26.3	30.2	K	9.7	29 20.8	55.6	
9.5	16.7	43.8		9.9	48.5	29.8		9.7	9.8	5.8		9.1	43.0	12.8		9.3	21.5	57.5	
9.7	9 35.8	5.3		10	30 0.3	56.4		9.5	11.6	59.8		6.7	45.4	44.4	K	9.5	46.7	45.7	
9.2	38.4	12.7		9.9	20.8	54.1		9.2	21.1	58.0		9.8	7 35.7	59.8		9.4	51.4	4.0	
9.6	52.1	26.9		10	33.3	17.0		9.4	41.5	32.5		8.8	8 33.3	41.5		9.0	54.5	44.0	
9.5	10 4.3	10.6		9.1	31 13.7	30.4		8.5	53.9	41.5	K	9.4	55.5	30.9		9.3	56.3	29.5	
9.5	55.0	52.0		8.5	23.3	15.1	K	8.5	58.7	4.6	K	8.8	57.9	34.7		10	31 5.1	33.1	
9.4	57.9	37.9		9.8	41.7	2.0		9.8	52 29.0	11.1		9.8	9 33.9	0.8		9.4	28.6	12.7	
9.8	11 38.4	11.4		9.8	32 5.9	30.5		9.7	31.1	27.3		9.5	34.2	23.5		9.4	48.3	24.7	
8.5	46.6	41.0	K	8.2	33 4.4	58.6	K	9.5	34.4	21.5		9.1	10 24.5	50.2		9.0	50.0	0.8	
9.8	55.8	40.2		9.8	41.8	9.0		9.1	39.3	17.3		9.8	31.9	4.5		7.2	53.3	33.0	
9.3	12 18.2	32.3		9.3	45.1	29.9		8.9	41.2	50.7	K	9.8	11 0.1	37.1		9.0	32 15.2	47.6	
9.3	22.2	29.0		10	57.7	7.2		9.6	53 10.3	26.5		9.4	19.2	13.9		9.5	31.8	32.1	
9.1	13 21.9	10.9	R	9.9	34 16.2	49.9		5.8	15.3	13.7	K	7.5	19.3	1.7	K	8.3	51.4	29.7	

501—560				561—620				621—680				681—740				741—800			
	2h	−9°			2h—3h	−9°			3h	−9°			3h	−9°			3h	−9°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	32 58.4	37.3		9.8	51 48.4	11.9		9.6	8 24.3	55.0		10	22 26.1	22.7		8.0	38 57.9	27.7	K
9.3	33 1.7	54.5		9.5	52 4.6	33.2		7.0	29.2	18.3	Sj	10	46.0	18.6		9.2	39 6.2	7.3	
9.1	34 15.3	17.5		9.4	5.5	57.2		10	44.7	13.5		9.3	48.0	22.7		8.2	38.3	17.2	K
9.7	19.8	54.9		8.8	7.0	42.4		5.0	48.0	21.3	K	10	23 15.4	47.5		10	39.3	22.9	
9.6	39.4	15.3		9.0	22.7	49.1		9.5	9 1.6	48.0		9.1	43.6	23.2		8.8	52.3	50.2	K
9.9	40.9	57.7		8.9	27.4	12.2		9.6	8.6	32.2		9.0	51.8	19.4		9.3	40 19.1	24.5	
10	56.5	35.9		9.5	28.7	33.4		6.5	34.1	41.5	Sj	9.4	52.0	50.5		10	33.0	56.6	
10	57.4	49.3		8.1	35.3	59.8	K	9.2	35.7	35.3	K	9.5	24 11.5	52.5		8.8	36.6	14.2	
8.4	35 2.5	0.1	K	9.8	37.0	59.7		9.0	41.9	28.5	K	9.4	50.7	36.3		8.8	46.2	3.9	Sj
10	23.3	54.8		9.4	53 4.0	43.2		9.7	10 23.5	38.6		9.0	25 1.1	52.8		10	41 8.8	19.8	
9.3	41.1	29.1		8.9	6.1	48.6	K	8.9	41.0	36.9		8.6	1.3	18.3	Sj	9.3	14.8	31.0	K
9.8	36 14.1	24.4		8.5	11.4	37.1	K	9.8	11 2.6	1.5		9.2	2.3	39.5		10	33.4	49.7	
9.4	54.4	59.3		9.4	16.0	20.3		8.8	4.9	59.4	K	7.5	22.4	5.5	K	10	42 34.5	32.5	
8.6	55.5	47.8		9.8	44.2	0.9		9.5	25.1	50.9		10	33.8	38.8		9.2	39.0	54.9	B
10	37 0.8	51.4		9.7	54 5.6	42.2		8.2	47.2	7.9	Sj	9.6	39.9	46.2		9.5	51.7	46.2	
9.4	1.9	17.5		9.5	31.6	45.3		9.7	49.9	21.1		10	26 0.7	26.7		9.7	43 3.8	28.8	
10	9.5	51.5		9.5	54.1	26.2		9.9	51.6	19.5		3.3	3.6	56.7	K	9.1	8.7	5.4	
10	26.1	40.8		10	55 36.9	49.3		9.9	12 1.9	58.5		9.0	37.1	50.6	K	9.2	20.2	41.7	
9.6	36.5	50.0		9.4	56.3	14.7		9.5	16.1	43.0		10	43.5	43.5		9.7	51.2	34.8	
9.4	38.3	16.4		9.6	56 7.0	6.0		9.8	53.4	21.7		9.8	44.9	35.2		8.9	44 0.6	2.2	Sj
9.2	39.9	23.2		9.8	31.6	29.3		9.8	13 0.3	32.2		9.0	27 4.3	36.1	K	9.1	26.9	20.6	
9.5	38 9.8	17.9		9.0	57 1.8	23.0		9.7	2.1	43.9		9.1	19.9	40.8	K	9.5	50.2	27.7	
8.8	14.0	56.9		8.1	8.9	1.9	Sj	9.0	55.3	29.4		9.4	44.5	44.9		9.2	50.2	20.5	
9.7	24.7	29.5		8.6	53.9	2.3	K	9.4	14 19.8	45.4		9.8	49.8	33.9		9.2	45 30.8	9.9	
9.1	38.5	27.1		8.5	58 12.4	30.9	Sj	9.6	24.9	39.9		9.8	50.4	24.0		9.8	45.5	30.3	
9.3	55.4	19.5		9.5	18.9	3.2		9.8	33.3	12.8		9.3	28 14.7	1.5	B	9.2	48.9	14.4	
9.5	59.9	4.6		9.3	21.0	25.1		9.1	43.4	53.0		8.8	16.1	15.3	B	9.4	46 9.7	3.5	
9.6	39 36.1	7.0		9.2	44.5	11.0		9.8	51.1	33.1		8.8	44.2	28.7	K	9.2	43.2	29.5	K
8.0	40 24.6	36.2	K	9.4	59 7.9	30.1		8.5	15 21.2	42.1	K	8.4	49.3	32.3	K	9.5	52.6	36.2	
9.5	53.8	14.3		9.3	19.4	40.0		8.6	23.9	50.6	K	9.3	55.0	9.9	B	9.1	55.3	41.5	B
9.0	41 39.9	22.0		8.0	20.3	1.2	K	10	46.0	59.0		10	58.9	7.0	WC	9.7	47 35.2	24.9	
9.9	46.8	57.3		8.1	24.0	9.1	K	9.9	50.0	24.6		9.5	29 36.7	24.2		9.9	35.7	3.8	
9.8	42 7.6	3.1		10	33.0	6.3		8.9	16 2.9	37.6	K	9.8	30 2.4	38.5		7.0	38.2	57.0	K
10	14.7	8.9		9.8	46.7	25.0		8.6	17 19.6	25.4	K	9.5	16.6	33.9		9.2	39.5	7.2	
9.4	34.3	18.1		9.3	49.5	47.1		8.8	18 4.2	28.1	K	9.6	21.2	25.0		8.7	48 11.2	21.1	
9.5	46.8	31.2		8.8	0 45.1	30.4		9.9	9.3	45.3		10	29.3	29.6		10	19.3	52.6	
9.8	43 49.3	19.4		9.1	50.8	37.2		9.6	18.3	5.5		8.7	32 18.3	28.4	R	9.3	37.8	49.1	
10	44 19.9	23.8		9.9	1 19.5	7.5		9.8	48.9	17.6		9.5	33 4.2	52.3		10	38.0	17.5	
9.9	44.5	53.3		8.8	48.4	0.4	K	8.9	19 0.5	57.4	K	7.0	10.3	30.7	K	9.0	38.4	7.9	
9.0	45 17.0	35.1		9.6	2 23.2	55.1		9.8	5.7	2.9		9.5	10.7	49.9		9.3	49 33.7	35.5	
10	31.5	50.4		9.3	38.5	8.9		8.8	10.4	29.4	Sj	9.9	29.3	22.6		10	50 17.9	9.7	
9.8	40.3	34.2		9.5	3 1.0	2.6		9.2	31.1	33.3	K	8.8	48.7	20.1		8.7	51 10.5	19.4	K
8.7	46 12.0	31.8	K	8.9	17.9	41.3		9.0	38.4	52.8		9.2	34 6.3	27.1		8.1	23.4	25.1	K
7.8	22.2	26.5	K	10	42.1	13.4		9.4	41.4	30.4		8.5	22.0	39.8	Sj	10	32.1	34.4	
9.0	30.9	48.3		10	53.6	9.6		10	20 5.0	59.8		10	42.5	1.3		9.0	32.9	43.0	Sj
9.5	54.5	58.8		8.6	4 12.1	25.5	K	10	27.9	14.5		9.7	50.4	17.1		9.1	45.7	20.5	
9.8	47 9.3	48.6		9.8	51.0	48.4		9.4	39.5	55.2		10	52.2	52.0		9.8	52 23.7	2.3	
9.7	28.1	30.4		10	5 0.6	12.8		9.4	39.6	12.0		9.5	54.7	31.4		10	40.5	55.5	
9.0	42.5	47.0		9.6	5.2	16.6		9.7	56.3	13.7		9.7	35 12.2	22.0		10	41.3	58.9	
9.7	56.7	0.3		9.2	17.3	11.5		9.0	56.3	2.6	K	9.7	15.2	21.1		9.3	46.4	42.6	
9.5	49 19.4	18.3		8.7	32.2	15.4	Sj	9.1	21 0.9	9.7		9.6	41.1	32.8		9.0	53 12.1	44.6	
9.8	20.0	36.1		10	35.5	42.4		9.7	11.6	52.9		9.2	55.4	42.2		9.3	22.1	46.9	
3.7	21.0	28.6	Sj	9.5	6 25.6	47.5		9.7	11.8	37.4		8.3	56.3	19.2	R	9.0	54 0.3	25.6	K
9.5	28.9	13.3		10	32.0	38.3		9.5	50.7	0.4		9.7	36 30.3	19.0		8.4	8.8	59.8	
9.5	39.5	23.1		9.6	40.5	43.5		9.4	50.9	33.4		10	45.1	8.1		10	9.5	53.2	
9.5	40.6	25.2		9.1	53.6	46.8		9.4	22 6.3	42.3		9.0	56.5	47.9		9.4	35.5	23.1	
9.5	50 37.9	43.1		8.8	56.8	24.7		9.1	7.5	50.4	K	9.1	37 21.4	33.5		9.4	37.0	57.9	
8.4	51 22.0	12.6	K	8.2	57.1	6.8	Sj	9.8	9.9	10.2		8.3	31.6	3.1	K	9.9	55 1.6	4.4	
9.5	38.4	37.5		9.0	7 55.3	17.1		9.4	20.8	29.8		9.9	38 4.3	55.7		9.7	15.6	32.6	
9.0	44.3	3.6		9.9	8 0.8	19.6		10	24.9	3.7		9.0	16.7	29.3	B	9.3	51.7	10.7	

801—860				861—920				921—980				981—1040				1041—1100			
3h—4h		—9°		4h		—9°		4h		—9°		4h		—9°		4h—5h		—9°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
8.4	56	4.1	9.6 K	9.2	10	47.1	46.1	8.8	25	18.8	55.2 K	9.5	40	15.2	32.1	9.8	51	40.2	41.8
10		37.8	58.3	9.2	11	1.4	47.9	9.6		39.4	51.8	10		32.0	0.6	8.2		41.1	33.3
9.4		39.3	19.7	9.8		12.2	59.9	10		46.7	56.2	9.6		33.8	7.5	9.3	52	10.8	43.3
9.5		48.8	57.5	9.5		32.6	2.9	9.3	26	0.8	19.1	9.4		39.4	50.6	8.8		28.5	20.4
9.4	57	43.4	14.3	9.5		42.5	51.4	9.1		24.1	47.2 K	8.5		45.8	31.0 K	7.8		31.1	22.8 L
9.0		52.6	8.7	10		47.8	12.4	9.8		24.9	25.5	7.7	41	19.3	45.8 K	9.0		53.4	11.4
8.0	58	8.7	39.6 K	10	12	5.1	32.4	9.0		31.6	45.9	10		23.1	11.6	9.3	53	3.2	58.0
9.5		30.7	50.4	9.4		21.0	25.9	9.5	27	4.7	51.8	9.7		30.9	24.9	9.3		30.6	17.8
9.4		38.2	27.0	9.4		51.6	20.5	9.5		11.9	19.1	9.5		42.0	3.0	9.5	54	0.9	9.5
9.5		55.4	58.6	10		54.3	41.8	5.0		15.2	16.3 K	9.8		43.4	26.7	8.7		8.9	26.1
6.3		57.8	14.7 K	9.5	13	13.5	21.1	9.8		18.2	6.6	9.5		45.9	45.0	9.0		48.2	27.0 K
9.1	59	9.7	11.4 K	9.1		18.4	23.6	9.9		45.1	14.7	9.0	42	4.8	15.3	9.3		56.1	22.2
9.0		16.6	6.3 K	8.5		42.1	29.8 Sj	9.4	28	15.7	32.4	9.8		5.9	19.0	9.6	55	1.6	30.9
9.8	0	4.9	2.8	8.0	14	6.4	11.7 K	8.6		41.6	28.5 K	10		13.3	49.9	10		4.7	48.8
8.8		17.8	9.2 K	10		11.2	59.7	9.9		49.3	59.3	7.7		22.8	16.0 K	7.3		41.8	6.8
9.8		23.7	3.4	9.4		15.8	54.3	9.8		52.2	54.9	9.4		36.5	2.8	9.5		53.6	19.0
9.5		31.0	29.1	9.5		36.5	44.0	9.4	29	17.6	20.1	10		39.2	40.5	9.1	56	13.2	27.6
9.8		42.9	55.7	9.5		43.0	54.2	10		31.5	37.2	9.0		45.4	10.8	9.3		14.5	18.3
9.0		47.2	50.2	9.5		47.6	22.7	9.1		40.9	5.6	10		58.6	36.2	9.5		18.5	27.1
9.3		47.4	4.1	9.3	15	12.8	13.8	9.6	30	21.9	32.4	9.1	43	4.4	51.1	10		26.1	1.8
10		57.6	42.5	9.3		14.6	57.9	10		34.4	1.0	9.7		38.4	27.4	9.5		33.6	55.3
9.0	1	25.5	22.9	8.8		20.2	26.9 K	9.5		35.3	46.4	8.1		49.3	48.3 Sj	8.8		35.7	48.9
7.6		47.7	3.3 K	9.3		20.4	8.2	9.8		44.6	57.3	9.9		54.2	41.8	9.5		45.8	7.2
9.7	2	21.9	49.7	9.5		22.6	58.0	8.5	31	3.2	20.7 K	9.3		59.2	11.4	9.8	57	0.2	27.7
8.7		28.8	50.4 K	10	16	14.2	30.3	9.4		19.6	13.4	9.3	44	7.4	50.5	9.6		2.9	47.8
9.8		31.4	25.2	9.9		23.9	44.8	9.1		31.7	38.2	9.7		23.1	39.8	9.5		21.4	14.5
9.2		34.6	1.0	9.5		49.8	4.5	7.8		39.1	38.0 K	9.5		32.0	0.5	9.2		48.3	35.8
9.1		50.5	58.8 K	9.2		51.6	32.5	8.7		40.2	20.0 K	9.5		35.5	31.9	9.3		49.6	55.0
9.6	3	5.8	8.7	8.6		55.5	52.6 K	10	32	4.7	0.7	10	45	29.5	55.3	9.5	58	7.5	56.5
9.6		10.9	26.1	9.3	17	19.0	17.6	8.8		30.6	14.0	9.4		36.7	10.6	9.8		19.3	5.0
9.8		11.5	14.4	9.4		28.1	26.6	9.3		36.6	0.1	9.3		43.2	9.0	9.8		33.9	32.5
9.4		18.4	34.2	8.2		44.8	5.0 K	9.1		39.6	24.8	9.8	46	5.6	32.8	9.5		37.4	42.4
9.0		19.0	11.5	9.4		45.2	48.8	9.4		53.3	19.7	8.2		10.4	48.2 K	10		47.2	51.8
9.1		27.6	43.5	7.7		49.4	33.3 Sj	9.8	33	9.7	42.2	9.6		28.2	7.2	8.3		49.3	38.0
9.3		28.7	45.3	9.5		52.6	28.0	9.5		19.6	55.9	9.3		29.7	39.7	9.0	59	30.3	5.6
10		32.8	26.7	8.7		54.3	4.7 K	9.6		35.2	29.0	9.0		32.2	7.8 K	9.0		32.9	53.3
6.0		48.7	11.8 L	9.5	18	27.1	52.5	9.5		38.4	1.0	9.7		38.8	30.0	9.5		41.5	15.0
9.5		53.1	39.2	9.1	19	48.9	8.8 K	9.2	34	12.3	8.6 K	9.0		44.5	53.5	9.3		48.8	49.3
9.1	4	14.0	57.7	8.2	20	11.0	13.7 K	10		34.5	11.5	9.4	47	9.5	30.9	9.0	0	12.6	20.3 B
9.9		50.4	53.0	9.7		12.5	55.1	9.5		35.7	59.6	9.1		11.4	6.1	9.5		57.4	13.2
10		52.3	50.0	8.8		43.1	52.9	9.4		40.8	21.7	9.1		18.5	34.3	8.5	1	14.5	17.7 K
9.4		55.1	12.3	9.8		52.7	21.9	9.4		53.6	32.5	9.4		58.9	14.4	9.5		40.0	59.6
7.0		56.8	13.0 Sj	9.4	21	17.2	36.0	9.5	35	40.5	7.3	9.1	48	23.6	47.0	9.4		44.7	26.8
8.5	5	5.1	39.1 K	9.3	22	2.2	58.2	8.5		42.7	5.1 K	10		53.6	59.6	9.5		49.0	58.3
9.8		22.1	38.0	9.1		9.1	25.9	10		43.3	52.0	9.3	49	4.0	19.6	9.5	2	58.8	47.9
9.2		33.7	29.5	9.5		38.0	16.5	8.9	36	7.5	25.0	9.8		25.5	55.9	9.0		59.5	17.5 K
9.4		41.2	57.0	9.5		44.8	43.0	9.3		12.0	58.2	9.8		27.6	34.6	9.3	3	1.2	18.6
9.3	6	19.9	54.1	9.3		45.4	12.8	8.0		20.6	53.9 L	9.5		28.4	14.7	9.2		32.5	15.3
8.8		22.4	50.7 K	9.3	23	5.3	31.9	7.0		37.5	3.8 K	9.5		31.7	8.9	9.3		46.6	35.5
9.8		24.5	34.9	9.3		20.4	34.1	8.0		38.2	3.9 K	9.3	50	6.4	4.0	9.8	4	12.4	0.2
9.6		51.0	57.0	9.4		34.2	21.8	9.2		46.2	16.6	9.3		6.8	10.6	9.0		13.5	35.1
9.0		51.8	43.6	9.2		59.1	0.3	9.2	37	30.1	12.6	8.3		21.2	39.1 K	9.5		28.4	11.8
9.2	7	15.9	50.7	9.5	24	7.4	49.1	9.8		46.0	27.9	9.0		22.1	31.2	9.5		52.5	17.6
9.0		26.8	13.0	10		23.7	55.3	8.5		50.4	21.3 K	9.4		27.0	21.8	8.0		59.0	16.2 K
9.1	8	13.9	15.9	9.2		33.0	51.3	10	38	27.7	37.1	9.8		35.1	54.3	8.5	5	5.3	7.3 K
8.4		17.9	51.5 K	9.8		33.0	30.4	9.5		56.8	41.1	9.5		43.8	13.0	9.5		8.0	58.0
9.5		36.9	17.2	9.1		56.6	9.5	8.5	39	5.0	55.3 K	9.8	51	0.4	47.1	9.0		41.6	27.5
9.8	9	41.0	25.1	9.0		59.1	9.6 K	8.8		20.5	44.6	9.5		4.1	56.0	9.0		51.7	33.8
8.3		43.8	48.8 K	9.5	25	10.6	56.0	9.2		41.3	34.4	9.0		12.6	58.7 K	8.4	6	4.4	0.1 K
9.3	10	16.7	27.8	9.0		11.4	36.7	9.6	40	5.8	33.2	9.0		17.3	54.8 K	9.5		10.9	1.8

1101—1160					1161—1220					1221—1280					1281—1340					1341—1400				
	5h		−9°			5h		−9°			5h		−9°			5h—6h		−9°			6h		−9°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.6	6	23.1	30.2		9.4	21	24.6	30.5		8.5	38	11.5	0.8	K	9.3	51	34.7	19.6		9.5	1	44.8	59.5	
9.2		46.3	5.9		9.5		42.6	12.5		9.1		52.9	4.2	K	10		39.5	50.2		9.8		51.7	20.0	
9.5	7	31.0	57.1		9.5		59.9	42.7		9.7		58.7	1.0		10		44.0	17.4		8.0	2	6.1	37.7	K
9.5		48.1	29.0		9.5	22	33.9	45.9		9.3	39	14.0	38.8		7.0	52	6.2	23.4	K	9.7		6.4	29.2	
9.3		55.1	32.3		8.5	23	25.0	46.8		10		24.3	32.3		5.5		10.9	35.0	L	8.5		23.6	7.0	K
10	8	3.7	26.4		9.3		38.5	1.1		10		32.4	16.3		9.0		31.4	48.3	M	9.0		26.9	31.2	K
9.0		34.6	37.7		9.3		39.3	32.2		10		34.4	8.6		9.3		37.4	48.3	M	8.5		55.8	25.4	K
9.3		42.6	41.7		9.5	24	13.1	53.0		10		46.5	12.5		9.4		39.1	30.5		9.4	3	0.8	24.1	
9.2		54.3	2.2		9.5		20.2	29.5		9.4		58.7	36.5		10		45.8	24.3		8.5		30.7	19.7	K
9.0	9	8.0	58.5		10		23.6	12.3		9.2	40	4.3	6.0		9.5		54.6	38.0		10		48.6	11.9	
9.5		49.1	58.5		9.5		34.0	48.5		8.0		5.4	53.5	K	8.5	53	1.3	44.6	K	9.0		50.6	49.6	M
9.1	10	5.8	16.8	K	10	25	45.1	55.2		9.4		35.2	54.0		9.5		15.6	6.0		8.6		51.6	49.6	S
9.5		20.0	6.4		9.5		52.6	7.8		9.7		47.7	27.7		10		36.7	20.3		9.0		55.7	13.2	K
9.9		33.7	7.1		9.5		53.0	46.6		7.8		51.8	34.1	K	9.0		39.5	52.2		9.4		58.8	32.6	
9.1		55.7	35.6		8.6	26	33.2	29.7	K	2½		53.2	44.2	K	9.3		41.4	49.1		9.6	4	1.2	33.1	
9.5		56.5	27.1		8.5		58.6	9.2	K	9.5	41	3.5	18.6		9.5		49.7	18.5		9.5		4.6	11.0	
9.5	11	17.5	36.0		9.5	27	9.9	42.6		10		18.6	3.4		9.5		51.7	56.6		9.7		7.6	11.9	
9.3		44.6	6.1		9.3		10.7	14.5		9.4		22.9	34.3		9.5		55.6	9.6		9.5		20.8	25.3	
9.0		49.6	12.4		9.4		34.8	31.4		10		32.7	21.7		9.2	54	7.2	40.5	M	8.0		26.2	36.5	K
9.3	12	5.1	58.4		9.2		59.1	52.9		9.0		47.5	54.5	K	9.2		11.7	57.0		9.1		48.7	13.7	Sj
9.4		11.7	33.6		9.8	28	6.7	33.4		10		57.6	12.7		9.4	55	11.2	41.9		9.3		53.0	21.7	
9.5		11.7	10.1		9.4		16.7	36.9		9.0	42	3.2	45.9		10		19.6	2.4		10		56.5	47.2	
9.5		19.5	2.5		9.3		20.7	20.8		8.7		3.7	43.2		9.0		21.6	11.3		9.1		59.6	25.3	K
9.3		26.0	55.7		9.6		42.8	30.9		8.5		22.0	26.6		9.2		22.8	24.2		9.2	5	4.6	50.0	K
8.5		36.7	35.8	R	10		57.2	56.8		8.9		51.3	48.1	M	9.4		33.7	58.5		10		18.4	10.7	
8.0		42.0	51.8		9.5	29	10.0	20.6		9.5		59.7	18.5		10		41.6	4.1		8.3		27.9	41.5	K
9.8		58.3	40.4		10		27.1	50.6		9.4	43	20.8	44.0		9.0		45.1	36.9		9.5		29.3	23.7	
9.5	13	16.1	24.5		9.5		46.2	53.7		10		32.8	58.8		9.2		46.2	41.8		9.0		31.9	29.1	K
10		24.6	29.9		10		46.5	45.7		9.3		33.6	1.9	K	9.3	56	10.5	34.8		9.4		46.5	39.2	
9.0		30.8	42.5		10		52.7	18.4		9.3		34.1	36.9		9.3		11.4	42.7		10		47.7	50.9	
9.2		33.7	18.6		9.5	30	18.7	18.4		9.0		35.3	44.0	K	10		12.7	58.3		9.4		49.1	31.4	K
10		51.2	58.2		9.1		22.8	26.4		9.5	44	13.8	25.1		9.0		13.7	14.8		9.3	6	0.0	30.9	
10	14	19.0	55.6		9.0		35.7	20.2		9.5		58.6	47.9		9.5		15.6	0.9		8.3		19.6	2.9	K
9.3		25.5	52.5		9.1	31	27.3	31.8		7.5	45	10.5	50.7	K	10		39.9	47.7		9.0		24.4	51.4	
9.4		36.7	19.0		9.3		38.5	2.3		6.0		12.6	5.4	K	9.6	57	6.9	31.3		9.5		33.1	33.8	
10	15	13.9	29.2		9.5		52.1	51.0		9.5		21.9	28.7		9.5		8.6	48.5		9.1		43.7	9.8	K
9.0		19.7	14.5		6.5	32	38.1	47.3	K	8.0		26.5	0.0	K	9.1		9.7	30.4	K	9.4	7	1.7	10.9	
10		29.9	46.7		9.3		42.6	9.1		9.3		31.1	30.4		9.5		11.6	50.1		9.0		3.5	45.1	
8.6	16	21.2	28.3	K	9.3		44.3	57.6		9.0	46	41.4	32.7		9.0		28.4	31.5	K	9.8		18.3	12.6	
9.5		52.8	43.4		9.4		54.6	46.9		9.3	47	11.2	58.7		9.5		29.2	57.9		9.5		25.1	58.0	
9.6	17	8.1	54.4		9.0	33	41.7	16.6		9.9		38.8	26.3		8.2	58	16.2	16.5	K	9.0		46.6	26.0	K
9.7		13.0	49.6		10		47.6	23.6		8.0		58.6	12.6	K	9.3		19.0	35.2		9.5	8	6.8	46.0	
9.0		15.6	58.4		8.5	34	4.2	52.2	M	9.5	48	5.8	25.1		9.3		24.3	26.5		9.4		14.4	57.8	
10		18.6	11.7		8.3		41.3	34.4	M	7.2		14.5	50.2	K	9.7		29.1	4.6		9.0		34.4	22.1	
9.0		54.7	22.0		9.2		41.7	19.6		9.5		23.7	19.6		9.5		35.7	19.3		8.3		37.5	48.3	K
9.6	18	14.1	56.6		10		53.2	55.4		8.6		38.6	53.8	K	9.0	59	5.7	21.0	K	9.0		38.5	32.1	
9.1		23.2	33.3		9.5	35	0.8	29.5		9.0		51.7	56.9		9.2		18.0	48.0		9.4		39.9	10.0	
9.8		42.0	29.5		9.5		10.7	23.2		9.0		56.8	25.5	M	9.2		18.6	35.9		9.0		41.9	25.1	
9.8		43.0	20.4		9.1		30.3	59.8		9.5	49	18.7	19.1		9.6		23.9	58.4		9.1	9	10.6	5.5	
8.0		47.7	40.7	K	7.8		31.8	39.6	M	9.0		24.7	56.8		10		25.8	54.6		8.7		13.7	32.7	M
9.5		53.3	24.6		10		54.2	46.1		9.0		24.7	15.1		9.7		34.3	26.7		9.4		15.3	2.0	
9.2	19	3.9	46.9		10	36	10.0	16.5		9.3		34.7	16.0		10		36.2	57.1		9.5		27.4	42.8	
8.0		7.6	13.1	K	7.3		44.8	0.4	K	10		45.7	16.4		8.4	0	6.3	43.2	K	10		28.4	50.1	
9.5		42.8	34.8		10		55.7	18.7		8.0		55.7	19.5	M	9.5		18.6	6.3		9.5		31.1	6.7	
9.0		49.7	32.1	K	9.3		58.6	6.2		9.0	50	5.5	50.1		9.5		43.7	57.7		8.2		31.5	53.6	K
9.5	20	9.8	24.6		9.0	37	16.8	31.0		9.7		5.7	21.3		9.5		49.6	9.9		9.5		36.0	42.5	
10		39.0	47.8		9.5		21.0	6.6		9.5		12.6	56.3		9.0	1	0.3	25.0	K	9.2		41.1	35.2	
9.3	21	4.2	56.8		9.3		25.1	41.6		10		45.7	12.8		8.2		0.8	26.3	K	9.4		45.1	1.2	
9.5		10.5	29.4		9.3		58.3	47.3		9.5		59.7	22.2		9.5		21.0	33.6		9.1		56.3	36.4	
10		11.7	5.0		9.5	38	3.4	51.8		9.5	51	28.7	23.5		9.5		34.6	54.1		9.6	10	24.2	53.8	

1371: oder gehört K zu 1372?

1401—1460				1461—1520				1521—1580				1581—1640				1641—1700			
	6h	−9°			6h	−9°			6h	−9°			6h	−9°			6h	−9°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.3	10 27.9	27.4		9.6	19 20.3	28.9		9.1	27 13.9	56.4	K	10	33 26.6	59.8		10	39 22.2	51.4	
8.5	29.2	35.2	M	8.0	26.4	57.5	Sj	9.8	37.9	8.8		9.2	29.6	47.4	K	9.5	36.6	17.5	
9.3	32.8	15.5		9.8	32.0	4.3		9.6	50.8	17.3		9.2	31.6	53.1		9.4	37.7	16.0	
8.8	57.3	55.8	L	8.5	35.2	15.2	K	9.6	51.0	26.7		10	32.7	35.0		6.3	47.3	57.4	K
10	58.0	43.2		9.8	43.3	35.0		9.8	56.5	13.5		10	33.0	38.4		8.5	55.0	0.5	M
9.4	11 26.1	45.6		9.8	20 10.5	2.9		9.6	28 13.2	31.0		9.7	35.5	19.2		9.8	40 3.9	33.3	
9.7	27.9	55.7		9.4	17.4	20.8		9.8	15.4	15.6		9.7	43.2	26.5		9.8	6.4	51.0	
9.4	31.2	9.5		9.8	18.1	46.3		10	23.1	15.8		9.2	53.3	47.0		9.5	29.8	15.1	
9.5	37.5	53.2		9.1	21.0	47.0		8.5	37.5	15.5		9.5	34 3.1	57.6		8.5	31.9	48.1	K
9.8	49.6	33.9		10	31.4	41.1		9.8	53.4	4.1		9.8	12.4	48.4		9.8	37.1	38.1	
5.8	56.3	20.2	K	9.3	36.2	25.1		9.4	58.6	44.5		9.5	15.2	10.6		10	58.0	28.3	
9.3	12 16.6	18.6		10	41.5	26.7		9.8	59.5	13.0		9.3	16.0	18.4		8.6	41 1.2	30.9	K
10	17.8	56.2		9.0	45.7	8.7	K	8.6	29 1.6	20.1		9.4	30.2	16.1		8.7	11.4	38.2	K
9.5	27.9	57.7		9.6	21 25.9	26.9		9.8	23.9	29.6		9.7	33.8	14.8		9.0	15.2	3.4	K
9.6	32.6	27.0		8.7	27.7	44.1	K	10	26.0	59.6		9.3	36.8	55.1		8.7	23.7	50.3	K
8.7	35.7	14.1	K	9.0	36.4	40.3	K	10	28.3	1.8		9.4	36.9	22.5		9.1	24.9	35.1	K
9.0	38.7	44.0	K	9.4	41.1	50.3		8.1	35.0	43.1	M	10	39.0	18.1		9.0	35.8	30.8	
9.6	40.9	27.8		9.0	54.8	18.7	K	9.0	41.1	45.7		10	39.4	37.6		9.5	41.7	56.8	
8.5	43.8	20.0		9.1	22 7.4	33.1		10	48.2	51.8		9.0	56.3	57.6		8.0	42 5.7	38.7	K
9.1	13 8.0	31.0		9.3	10.7	12.0	K	9.8	48.2	56.5		9.9	56.7	59.6		9.1	6.7	25.4	
9.5	8.5	2.9		9.4	13.1	46.2		8.8	56.4	5.9		5.9	35 0.8	2.1	Sj	9.8	12.9	23.1	
9.4	44.3	13.0		10	23.2	0.0		9.7	58.2	31.4		8.9	13.7	44.2	M	10	20.0	28.9	
7.2	48.2	50.4	K	7.7	25.6	6.8	K	9.0	30 0.4	45.2	M	9.0	20.5	46.5		9.8	23.9	17.6	
9.1	49.9	39.5		9.0	27.1	49.5		9.8	9.4	3.3		9.8	22.9	15.2		9.6	26.4	36.1	
9.5	50.9	23.0		9.8	33.5	5.4		9.0	19.5	14.3	M	9.8	35.4	22.0		9.3	27.1	44.9	
10	53.5	27.9		8.7	33.6	27.0		9.4	21.9	57.8		8.4	39.0	25.8	K	9.0	38.2	2.4	K
9.5	14 4.6	35.4		10	38.8	33.5		9.6	27.4	35.8		9.8	56.0	2.9		9.0	42.0	23.7	M
9.5	9.0	0.7		9.7	41.3	43.8		9.1	36.7	20.7		9.8	56.9	57.5		9.0	42.0	50.0	K
9.1	12.5	3.1	K	9.3	43.1	38.3		8.6	42.6	16.3	M	8.5	36 8.4	35.4	K	9.2	45.5	31.3	K
9.8	43.7	45.1		9.0	51.8	13.7	K	9.8	46.4	55.8		9.0	8.6	56.0	K	9.7	57.9	20.7	
7.5	50.6	36.9	K	9.5	23 5.2	52.2		9.8	55.1	24.7		9.5	9.0	46.6		9.3	43 4.7	5.0	K
9.4	58.2	35.8		9.9	11.5	45.3		9.1	59.4	56.0		10	11.6	55.7		9.4	16.1	52.9	
10	15 5.9	53.0		6.3	19.5	59.3		8.3	31 3.5	8.6	M	9.8	15.9	22.6		10	19.2	36.9	
8.2	6.1	25.6		9.8	22.2	12.9		10	10.6	27.2		10	30.8	38.6		10	26.4	41.3	
9.4	22.4	23.6		9.3	34.6	18.1	K	9.8	20.7	25.7		9.0	33.9	56.8	K	9.5	27.3	42.4	
9.8	26.0	47.3		9.7	41.0	24.3		9.4	21.2	28.4	K	9.5	35.0	43.9		9.8	53.4	43.0	
9.8	26.9	21.6		9.2	55.2	33.1		8.5	37.7	11.6	R	9.1	35.3	22.5		9.0	59.9	33.2	
9.4	43.1	7.5		8.6	56.5	33.9	K	9.1	41.4	38.8	K	9.3	37.3	18.3		9.8	44 4.4	52.0	
9.0	16 4.0	44.2	K	9.1	57.9	9.5	K	9.2	43.0	27.5		9.1	45.8	17.0		8.5	6.5	57.9	
9.8	15.9	26.3		9.4	59.4	41.1		9.2	43.5	39.1	K	9.8	58.7	11.2		7.0	20.9	54.8	
9.4	20.3	56.7		10	24 20.4	58.0		9.2	58.8	38.5		9.8	37 0.2	42.5		9.8	25.2	42.7	
9.2	34.6	48.8	K	10	27.5	39.5		9.5	32 6.0	31.7		10	0.6	7.3		9.1	27.9	24.3	K
9.3	38.6	27.9		9.6	37.7	28.8		9.6	8.9	31.8		9.3	4.5	59.8		9.8	34.1	37.0	
6.3	43.5	48.4	K	9.1	39.1	39.0		8.5	18.4	14.3	K	8.8	5.6	20.2		9.5	34.7	27.2	
9.4	44.3	16.9		9.3	43.6	2.0		10	22.0	39.4		9.7	13.9	28.8		9.1	39.5	22.5	K
8.5	52.8	16.7	K	9.8	25 1.0	24.7		9.8	24.9	19.5		9.6	23.7	7.6		8.8	49.3	10.7	K
10	17 4.3	38.1		8.3	2.2	32.0		9.6	26.1	35.2		9.4	40.7	37.0		9.4	55.2	39.4	
9.8	8.7	12.4		9.4	9.5	9.2		9.0	28.7	50.7	K	9.1	51.6	6.5		9.8	56.3	21.8	
9.1	10.8	19.4	K	9.5	12.6	29.9		10	29.3	37.1		8.2	52.8	14.9	K	9.4	57.4	43.8	
9.3	47.4	34.0		8.5	38.4	57.5	K	9.8	30.0	8.7		9.1	53.2	30.9		9.7	58.7	45.9	
9.5	18 3.9	27.3		9.5	48.5	25.4		9.6	30.5	30.0		9.3	38 12.1	8.0		9.8	45 6.9	43.0	
9.4	6.1	4.8	K	9.5	56.0	26.2		9.3	41.0	30.4		9.3	28.7	42.3		9.8	8.7	35.8	
10	13.9	59.1		9.0	26 4.4	58.8	K	8.8	46.7	43.2	K	10	29.2	23.9		9.4	12.8	57.5	
8.6	21.6	3.4	K	9.4	6.7	36.1		9.8	57.7	12.0		9.7	29.8	15.5		8.5	14.0	22.1	K
9.8	24.3	48.8		9.4	20.1	36.9		9.2	33 2.5	2.1		9.5	31.4	39.9		9.8	19.8	14.7	
7.5	27.0	0.6	K	9.1	22.0	33.0	K	9.3	2.6	6.1		8.5	31.6	49.9	M	9.4	27.5	23.0	
9.8	19 5.4	40.3		10	39.9	31.7		9.8	9.7	41.2		9.2	39.4	53.6		9.0	46.3	59.8	
9.0	12.3	19.3	K	9.3	41.9	20.2		9.7	12.1	20.7		9.8	48.4	28.6		9.7	46 0.9	43.2	
9.8	17.1	9.8		8.7	27 2.6	15.1	K	9.7	12.6	6.2		9.8	39 11.3	21.1		9.0	1.0	49.5	K
9.5	18.3	55.9		9.3	8.1	19.9	K	9.3	16.7	53.6		9.3	13.5	53.2		8.8	4.3	11.8	K

1601: röthlich

1701—1760				1761—1820				1821—1880				1881—1940				1941—2000			
	6h	−9°			6h	−9°			6h—7h	−9°			7h	−9°			7h	−9°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.0	46 6.1	53.5	K	8.2	51 32.6	59.8		9.2	57 10.7	38.3		8.0	3 20.5	4.7	K	9.8	8 21.9	13.0	
9.0	7.0	56.6		9.7	40.4	17.7		9.3	13.4	3.9		9.4	31.9	38.2		9.8	37.8	39.0	
9.4	10.9	47.2		9.7	46.5	48.6		8.9	14.8	26.1	K	9.6	36.0	26.5		9.6	48.6	23.1	
9.3	22.2	19.0		8.7	47.3	59.1		9.8	24.7	30.1		7.8	37.8	55.8	L	9.8	52.0	16.6	
8.0	25.2	30.9	K	8.9	52.2	8.7		9.3	29.9	19.7		9.7	38.7	22.4		9.8	55.9	6.5	
9.4	26.8	31.7		9.7	52.9	40.4		9.7	46.1	53.5		9.4	40.3	7.3		10	9 0.4	33.5	
9.5	40.5	47.9		9.5	53.1	27.2		8.7	49.5	57.2	K	7.2	52.1	6.4	Sj	8.3	11.3	1.1	Sj
9.8	40.9	25.8		8.4	59.9	50.7	M	9.7	56.6	34.3		9.6	52.2	3.0		9.7	34.4	15.6	
9.4	46.2	4.8		9.1	52 0.7	54.5		9.5	58 8.8	11.0		9.6	57.1	0.8		9.7	35.7	28.7	
8.9	50.0	49.9	K	9.5	8.5	28.8		9.8	9.4	22.8		8.8	59.4	13.4	K	9.4	41.4	49.0	
7.2	51.4	20.0		10	17.6	3.4		9.3	13.9	20.1		8.7	4 3.2	35.9		9.4	42.1	28.3	
9.1	58.9	4.9	K	10	26.1	53.1		8.8	24.5	53.3	K	9.8	5.2	30.9		9.3	45.6	39.3	
9.5	47 3.7	37.0		9.8	38.5	52.8		9.3	38.6	54.1	K	9.4	11.1	51.7		8.3	58.6	28.6	
9.2	3.8	51.7	K	9.0	40.7	31.6		9.5	44.7	31.6		9.5	19.4	8.9		9.3	10 2.3	7.5	
9.1	6.8	38.9		8.6	41.1	18.1		8.7	47.9	24.8		9.0	21.7	4.5		9.4	18.9	9.6	
9.1	7.0	51.4	K	9.6	53 4.2	4.8		9.3	55.3	8.1		9.5	31.6	50.6		9.4	19.2	59.7	
8.8	9.7	9.2	K	9.2	5.7	34.4		9.6	59 4.9	16.9		9.4	32.9	16.5		9.5	28.9	43.8	
10	10.2	57.0		9.8	11.0	49.7		9.3	6.7	16.0		9.7	56.2	15.7		9.5	31.8	42.1	
9.8	15.0	0.7		9.4	13.3	39.0		9.1	10.0	20.2		9.5	5 9.5	15.1		9.6	32.9	35.2	
9.8	21.8	19.1		8.5	17.6	5.5		9.3	10.1	14.4		9.4	15.6	31.2		9.3	40.4	9.6	
7.5	26.4	26.0		9.8	22.9	22.5		9.7	14.7	13.6		9.1	16.5	41.7	K	9.5	44.5	55.0	
9.4	31.2	18.6		9.3	33.1	0.4		8.5	15.3	3.9		9.5	30.2	32.9		9.5	45.5	16.2	
9.0	37.0	0.4		8.3	48.4	18.1		10	20.1	41.0		8.8	34.8	54.7	K	10	59.3	44.2	
10	44.4	22.7		8.8	50.2	26.4		8.2	20.6	57.0	K	9.3	36.4	14.2		8.3	11 9.9	15.5	
9.2	46.5	13.7		9.7	55.3	53.4		9.5	29.5	57.5		8.2	41.4	36.4	K	9.0	19.1	57.7	
10	54.5	48.1		9.7	59.4	17.8		10	32.5	16.0		8.9	53.0	28.1	K	9.3	20.5	17.0	
9.1	48 13.6	36.7		9.8	54 6.7	5.3		9.5	41.4	41.1		9.5	6 2.1	27.1		10	32.1	53.2	
8.8	16.2	58.1	K	9.4	9.1	59.6	K	9.0	49.7	56.6	K	9.8	22.2	29.6		9.0	33.0	46.7	
7.8	18.0	8.8		9.1	20.4	44.1		9.5	55.5	49.0		9.5	34.3	20.3		9.8	42.9	9.1	
8.5	31.1	27.7		9.0	23.9	15.8		10	58.9	22.0		9.5	34.7	3.9		10	43.7	2.6	
9.8	41.1	36.4		9.8	28.3	25.9		9.4	59.1	49.7	K	9.1	53.5	18.8	K	9.6	44.7	21.1	
8.5	42.8	0.3		10	31.8	28.5		8.7	0 0.3	34.9	M	7.8	7 0.4	12.7	K	9.2	50.3	19.7	
8.2	43.4	18.2	S	9.5	32.3	57.8		8.1	26.6	21.7	K	9.2	2.0	58.8		10	51.2	37.1	
10	52.1	51.5		9.0	32.3	20.8		7.3	29.1	45.9	K	9.3	7.8	54.0		9.4	57.1	57.7	
9.0	49 21.4	44.0		10	35.3	21.1		9.8	34.9	37.5		10	12.8	40.5		9.5	12 3.4	10.2	
9.7	28.2	12.9		8.0	37.0	30.0		9.4	56.0	14.8		8.5	13.9	0.3	K	9.8	5.3	7.5	
9.6	32.3	12.1		9.8	38.2	28.1		9.6	1 10.2	27.6		9.3	17.2	50.7		9.4	16.0	17.1	
9.2	49.7	55.5	—	9.5	41.4	37.4		9.0	19.4	44.6	K	9.2	18.0	20.8	K	9.6	19.5	35.7	
9.0	51.6	36.4		9.5	42.1	53.0		10	19.6	7.0		10	18.8	41.6		10	21.5	53.4	
9.8	50 5.2	44.9		9.3	44.4	42.6		9.6	21.0	16.1		9.6	20.8	51.8		9.7	27.1	39.8	
9.3	6.6	52.0		9.1	47.8	48.9	K	9.8	25.0	14.8		5.7	22.3	42.2	L	9.4	28.4	41.8	
9.5	14.4	38.5		9.4	56.0	48.0		9.2	27.5	29.3		10	28.0	50.9		9.1	30.3	5.4	
9.1	24.2	11.9		9.0	59.4	14.2		9.4	46.0	28.5		9.3	28.4	58.5		9.8	32.6	18.9	
9.8	25.1	58.2		8.0	55 12.0	40.9	K	9.2	47.3	32.8		10	32.7	48.6		9.7	41.7	33.5	
8.6	27.4	54.2		8.2	16.6	0.4	K	9.8	49.1	52.4		9.8	37.6	52.2		9.8	45.9	29.0	
9.6	29.5	48.6		9.5	22.7	33.7		9.8	55.3	1.9		9.4	38.4	51.2		8.9	45.9	30.0	
9.1	30.3	16.8		9.2	38.0	7.2	M	9.3	2 8.2	1.4		9.7	42.2	59.8		9.3	49.9	41.5	
9.7	31.5	53.3		9.4	38.1	50.4		10	15.0	47.2		8.5	46.5	37.9	K	9.3	52.4	43.3	
9.5	33.7	9.4		9.1	39.9	25.3		9.8	16.1	51.4		9.1	47.0	57.8		9.6	13 14.7	36.0	
9.1	37.9	42.8		9.1	41.8	52.4		9.8	17.3	7.7		10	48.3	48.9		9.3	34.4	44.8	
9.8	58.6	1.6		9.0	54.3	12.4	K	9.1	18.4	13.0		9.1	50.1	32.0		10	35.0	20.7	
9.4	51 2.4	19.7		10	58.1	13.0		9.2	35.4	29.7		10	53.8	51.4		8.7	38.5	22.9	K
9.8	2.9	30.6		9.5	56 3.4	36.6		9.6	38.8	2.8		9.1	54.9	43.5		9.2	50.0	54.9	
9.5	5.3	53.2		9.1	18.2	22.9	K	9.8	58.4	10.3		9.4	58.7	38.6		8.2	57.1	33.2	K
9.0	10.1	46.5		9.4	21.9	18.7		9.1	59.7	4.7		9.1	8 4.5	55.6	K	9.7	14 23.2	53.3	
9.2	14.4	40.8		9.0	24.4	20.8	K	9.8	3 0.2	16.4		9.3	5.9	7.5		9.1	24.8	37.0	
9.2	21.8	58.5		9.2	57 0.7	8.0		9.7	2.2	4.3		9.6	13.6	34.3		9.4	33.9	40.4	
9.8	24.5	43.0		6.3	5.1	54.4	Sj	9.2	3.5	58.3		9.4	15.3	4.1		9.2	38.7	3.1	K
9.8	27.0	24.1		9.4	8.6	0.5		9.9	8.3	22.5		9.5	17.4	55.3		9.0	50.8	7.6	K
9.4	28.2	6.5		9.7	10.2	53.0		8.4	16.4	6.8		9.3	17.6	48.2		9.8	57.0	50.5	

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	7h	−9°			7h	−9°			7h	−9°			7h	−9°			7h	−9°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	15 4.4	14.9		9.1	21 2.5	9.0		8.6	28 34.8	27.8		10	35 15.7	46.2		9.4	42 48.6	54.9	
9.7	11.6	59.4		9.2	4.9	46.1	K	10	35.2	44.9		10	29.8	20.8		9.7	49.0	53.1	
9.7	17.2	39.4		9.7	5.2	55.0		9.8	41.0	18.4		8.5	42.4	12.8		9.5	58.1	53.5	
9.8	22.4	24.8		8.7	9.1	0.5	K	9.0	49.3	42.9	K	9.5	46.1	13.7		9.3	58.2	38.1	
8.5	29.9	56.5	K	9.8	15.9	46.7		9.4	51.9	32.7		10	36 2.4	31.4		9.6	43 1.1	7.0	
9.8	33.7	35.8		9.7	30.8	32.1		10	58.3	49.8		9.5	3.5	1.0		9.3	10.3	23.4	
8.8	41.6	57.6	K	9.5	32.3	40.7		9.8	29 3.6	39.5		9.5	10.9	28.5		9.6	11.9	4.2	
9.6	45.9	47.2		9.3	33.5	51.2	K	9.4	20.4	48.7		9.0	21.2	15.3		9.2	36.0	55.1	
9.8	47.3	37.6		6.8	40.3	44.6	K	8.2	21.9	57.0	K	9.8	23.3	31.2		9.8	49.2	23.0	
9.4	48.5	21.2		9.4	50.6	0.7		9.5	23.2	45.3		9.5	38.1	59.2		9.8	57.4	0.4	
7.8	53.4	21.4	K	9.4	54.2	52.0		9.8	25.4	35.5		7.5	40.8	47.9		8.2	44 2.4	57.2	
9.7	54.0	52.6		9.8	22 8.6	26.2		9.8	31.5	27.2		10	52.7	54.0		10	7.9	1.5	
9.4	16 10.3	47.8		9.4	11.5	21.7		9.5	37.3	50.6		9.5	57.1	48.7		8.9	14.7	16.0	
8.7	11.3	45.0		9.4	13.8	48.6		9.0	43.1	51.8	Sj	9.2	37 8.7	57.2		7.2	23.7	2.3	B
9.2	13.2	49.2		9.6	17.3	9.2		8.7	46.8	17.8	K	9.8	10.2	52.4		9.8	35.6	28.9	
9.7	14.6	56.2		9.8	26.1	30.8		9.8	47.7	8.6		9.8	10.4	47.6		8.8	46.5	31.2	
10	18.2	43.3		9.4	29.9	10.7		9.3	53.7	50.8		9.0	16.5	1.8		9.8	55.6	51.0	
8.7	21.7	21.0	K	9.5	37.7	57.6		9.7	53.8	31.1		9.2	17.9	55.2		7.7	45 0.7	17.1	B
8.7	22.8	32.1	K	9.2	52.4	48.2		9.7	30 35.3	47.4		8.0	26.1	13.1		9.1	5.6	43.3	
8.0	22.8	47.3	L	9.7	55.0	55.8		9.3	38.1	57.4		8.7	32.2	55.1		8.6	10.3	53.1	K
8.5	25.5	58.9		9.4	23 17.6	47.0		10	39.9	58.7		10	53.3	59.3		9.5	14.1	7.6	
8.4	34.8	32.1	K	8.8	28.4	24.1	K	9.8	40.0	39.1		9.4	59.2	14.4		9.1	20.4	2.9	
9.6	17 0.4	22.1		9.1	34.4	49.8	K	7.8	43.5	30.2	K	10	38 1.1	58.0		9.1	40.9	38.9	
9.5	13.6	51.6		7.8	46.8	0.5		9.8	31 6.1	6.7		9.7	10.7	17.0		9.4	41.8	4.8	
9.1	41.4	17.5		6.3	51.3	28.7	K	10	11.0	50.1		8.3	14.0	56.6		9.8	46 1.8	41.0	
9.3	49.1	44.5		7.0	24 5.4	48.9	K	9.3	11.7	17.6		9.6	30.0	28.5		9.4	8.5	47.6	
9.7	50.9	58.7		9.0	19.8	58.5	K	9.4	21.4	29.5		7.6	34.1	48.7	L	9.4	11.6	52.3	
9.5	59.0	54.6		9.8	20.6	39.2		9.0	28.1	30.2		9.1	46.5	58.9		9.7	11.9	29.9	
9.8	18 0.8	29.4		9.8	23.8	3.7		8.7	37.7	43.6		9.5	49.6	42.7		9.1	23.7	51.1	K
9.5	28.2	39.0		8.9	42.5	58.8	K	9.5	44.8	50.0		9.0	57.1	29.4		8.9	29.9	35.1	
9.5	29.9	16.5		9.8	57.3	50.3		9.8	51.6	9.8		9.5	58.9	45.5		9.4	52.3	45.0	
9.2	31.7	35.4		9.7	25 11.1	8.2		9.5	56.7	56.4		9.1	39 0.6	11.9		9.8	55.4	8.0	
8.7	47.9	46.5		9.5	13.6	57.1		9.1	32 0.8	56.4		8.8	2.0	25.5		9.5	47 17.0	43.8	
9.8	50.3	8.9		8.9	15.1	57.3	K	8.7	3.1	38.3	K	8.3	3.4	49.3	K	9.5	19.3	58.9	
9.3	51.9	50.1		9.3	38.7	42.3		9.3	12.3	45.5		9.3	4.8	8.7		8.0	26.8	24.9	M
9.3	54.0	52.3		7.5	46.4	21.9		8.2	14.1	37.7	K	9.3	16.6	12.3		9.8	40.4	5.7	
8.7	19 0.8	41.0		7.3	48.6	6.4		8.4	24.7	52.2	Sj	10	19.2	52.1		9.5	43.6	11.8	
9.0	4.7	39.8		9.0	26 6.3	24.1		9.4	26.2	17.4		9.2	28.5	7.4	K	9.7	44.1	56.8	
10	13.3	11.3		9.8	7.2	8.5		9.1	43.3	23.5		9.4	48.7	22.2		9.6	46.9	57.3	
9.3	16.2	35.3		9.3	10.8	32.3		9.4	46.6	9.8		9.3	52.8	52.2		9.5	53.2	36.0	
9.8	21.6	30.7		9.0	13.8	17.4		9.4	59.9	9.4		9.8	40 16.2	52.3		9.5	59.5	11.1	
9.2	26.6	26.3		9.5	30.1	39.0		9.4	33 7.9	42.5		10	17.3	21.4		8.8	48 2.1	23.4	
7.0	31.5	48.4	K	9.9	31.7	48.1		9.5	15.9	37.8		9.8	25.6	47.2		9.4	23.2	27.3	
9.8	39.9	28.0		9.6	40.1	32.8		9.4	19.3	25.7		9.2	28.8	57.0		9.8	24.8	28.7	
9.7	41.0	25.7		9.8	44.3	16.9		8.8	40.5	2.4	K	9.8	35.0	33.6		9.8	41.0	12.4	
9.5	49.4	22.2		8.5	52.9	21.8		9.1	45.3	21.1		9.3	38.1	4.4		9.5	54.9	34.0	
9.6	55.2	15.3		10	54.3	26.2		9.7	46.5	18.2		9.8	49.2	32.7		8.1	49 1.4	25.4	M
9.0	59.2	16.4		9.3	27 4.4	26.8		9.8	48.6	8.0		8.1	49.8	57.7	K	9.5	8.5	10.9	
9.5	59.8	47.0		9.3	12.3	20.0		8.2	50.2	12.7	K	9.7	54.2	29.0		7.8	12.4	28.7	M
9.1	20 0.0	24.3		9.8	15.2	11.4		9.8	34 12.2	52.1		9.0	59.5	35.1		9.5	23.4	57.5	
9.8	2.0	24.9		9.8	15.8	4.6		9.4	14.7	50.8		10	41 19.7	22.1		9.4	26.2	16.7	
8.9	2.8	30.7		9.4	26.3	24.0		4.0	19.3	13.3	K	9.1	25.7	35.3	M	9.2	45.6	43.4	
9.6	5.9	31.7		9.4	34.7	43.8		10	32.4	57.1		9.8	42 1.9	48.9		9.8	46.3	31.2	
9.5	18.1	41.8		8.2	37.9	32.9	Sj	9.8	41.2	5.7		8.3	2.1	59.3		9.0	52.1	16.1	
9.3	21.6	30.8		9.5	57.6	34.7		9.0	41.6	7.8	K	9.8	15.6	12.4		9.3	50 7.1	24.5	
9.7	28.7	1.7		9.5	28 13.1	9.8		9.0	45.4	9.0	K	8.9	17.3	58.1		9.5	9.5	42.5	
10	41.0	53.0		9.0	16.2	12.1		9.5	46.9	42.4		9.7	25.6	55.3		9.4	23.9	39.2	
8.7	41.9	56.2	K	9.8	19.8	41.0		9.4	52.2	40.2		9.4	36.4	53.2		8.7	24.6	26.3	K
9.0	52.7	22.4		10	20.7	54.9		9.5	55.1	42.8		8.3	42.8	35.2	M	9.7	25.4	21.0	
9.4	54.4	17.3		9.3	23.2	13.5		9.3	56.6	13.5		9.3	44.0	50.9	M	9.8	35.9	34.4	

2301—2360				2361—2420				2421—2480				2481—2540				2541—2600			
7h		−9°		7h—8h		−9°		8h		−9°		8h		−9°		8h		−9°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.2	50 44.6	47.8		8.2	58 27.8	31.2	K	9.8	5 48.6	16.8		9.8	14 15.0	29.6		9.5	23 17.9	0.8	
9.7	45.6	50.0		9.1	30.8	34.7		9.5	53.7	20.9		9.8	28.0	6.5		8.0	32.8	48.1	
9.8	45.9	25.8		6.6	32.9	42.8	K	9.5	6 8.6	5.2		9.8	28.6	30.5		7.3	38.2	43.1	
9.8	53.7	57.5		9.4	37.1	51.0		9.0	26.5	59.3		9.0	30.8	23.5	K	9.6	40.4	2.8	
9.8	58.4	41.7		9.6	59 6.5	54.9		9.5	28.6	57.6		7.6	48.7	30.6	K	8.0	42.5	22.0	
9.5	59.1	25.8		9.2	8.6	20.5		9.2	31.5	56.4		9.0	49.8	11.2		9.4	51.5	33.9	
9.0	51 5.1	15.0	K	8.0	19.4	14.6	K	9.0	32.2	23.5		9.3	50.7	44.6		9.0	56.1	41.0	
9.0	6.6	15.0	K	10	25.9	6.2		9.8	38.3	41.2		9.8	15 8.4	53.6		10	58.7	46.0	
9.8	10.0	43.2		9.3	32.4	42.4		9.0	41.1	17.7		9.3	10.1	18.6		9.9	59.6	52.0	
9.2	27.6	32.1		9.2	42.4	12.7		9.7	45.7	39.8		8.7	21.4	59.0		8.3	24 15.5	26.0	
8.2	44.2	41.0	K	9.5	49.2	27.6		9.7	50.6	48.6		10	31.3	48.5		9.0	19.4	15.9	
9.3	49.5	42.3		8.8	50.8	15.9	K	9.8	52.8	32.0		8.4	36.9	32.3	K	8.9	30.8	2.9	
9.2	52 1.2	51.0		9.5	53.0	12.1		9.5	58.1	49.4		8.5	37.2	3.2	K	9.4	31.7	59.5	
9.8	7.2	8.1		9.8	55.4	58.8		8.4	7 1.1	51.8	K	9.8	51.7	8.0		9.2	33.9	45.7	
9.5	8.9	26.2		9.3	56.7	42.5		8.0	1.4	35.9	K	9.9	54.2	33.3		10	25 2.6	36.5	
9.8	21.0	47.0		9.7	0 0.3	46.7		9.2	17.4	46.0		9.5	16 37.0	26.7		9.9	13.9	26.7	
9.1	24.8	2.3	M	9.8	16.1	44.9		9.5	18.6	22.2		9.0	39.4	0.2	K	9.3	29.8	0.3	
9.4	32.8	58.3		9.8	17.1	3.5		9.7	30.8	58.0		8.2	40.5	30.3	K	9.5	33.3	57.5	
9.8	40.0	43.4		9.5	25.6	26.5		9.1	33.2	13.1		9.6	17 0.1	57.2		9.5	36.7	44.5	
9.5	53 6.7	21.7		9.6	37.1	6.4		9.2	53.2	35.7		9.0	3.6	4.7		9.5	45.4	25.7	
9.4	9.5	14.0		10	40.4	57.5		9.5	8 1.0	22.6		8.5	3.7	9.8	K	9.7	51.3	56.7	
9.1	15.7	37.4		9.5	46.3	51.4		9.5	20.3	40.6		9.8	17.1	30.1		9.7	53.8	48.4	
9.5	22.9	40.2		9.0	47.5	59.1		9.5	29.1	58.6		9.8	31.8	45.5		9.1	56.4	3.9	
8.2	25.0	56.6		9.9	54.5	46.7		9.5	29.2	53.3		8.5	33.5	34.1		9.0	26 10.6	7.5	
9.5	26.9	22.5		9.1	56.1	7.4	K	8.2	35.5	1.1	K	9.7	46.5	20.7		9.8	16.7	46.8	
9.3	45.9	48.3		9.2	1 9.3	0.4	K	9.4	42.9	59.3		9.5	56.3	47.5		10	17.5	49.3	
9.6	54 2.5	43.0		8.8	17.2	41.5		9.5	59.9	55.7		9.6	18 5.0	51.3		10	21.2	42.7	
9.5	6.4	15.0		9.4	21.9	47.7		8.0	9 0.6	20.3	K	7.2	10.7	19.4		9.4	22.4	20.0	
9.4	16.2	58.2		8.9	23.1	56.1		9.8	5.0	9.2		10	11.3	48.7		8.1	25.1	29.5	K
9.0	17.8	36.8		9.2	37.1	33.4		9.1	18.0	0.8		9.3	14.4	11.8		9.0	33.3	31.2	K
9.3	31.7	22.4		9.7	52.8	49.8		9.5	26.1	55.5		9.7	18.6	33.7		7.3	47.8	30.5	K
8.5	38.0	29.8		9.2	56.2	58.6		10	38.0	25.2		8.5	20.6	48.4		9.0	27 6.5	23.0	
9.4	54.6	51.3		9.8	2 10.3	46.2		9.8	51.7	14.6		9.0	40.2	16.8		10	9.8	6.8	
9.1	56.3	39.7		9.8	18.9	46.2		8.9	10 18.8	21.6		9.7	43.1	57.4		7.5	11.3	27.4	K
9.1	55 11.5	38.8	K	9.3	30.6	17.1		9.1	22.5	37.2		8.8	49.5	15.6		9.7	14.3	7.8	
9.4	21.4	4.9		9.4	39.1	36.9		9.4	23.4	41.6		8.3	50.8	55.1	K	9.4	36.6	39.0	
9.4	21.6	53.0		8.6	43.6	35.3		9.3	35.8	22.8		9.8	59.2	10.1		9.2	49.7	25.5	
9.0	25.1	38.7	K	9.3	45.5	2.0		9.2	36.1	48.6		9.0	19 17.3	1.0		9.2	54.8	52.5	
9.4	38.7	22.3		9.4	3 3.6	4.9		9.4	41.5	53.0		9.8	56.6	48.1		9.9	28 6.4	30.1	
9.5	43.6	20.7		9.3	6.1	10.2		9.3	59.7	48.0		10	20 0.4	27.0		10	11.1	39.1	
8.8	46.6	2.6	K	9.4	16.0	30.8		9.5	11 5.1	23.9		9.8	2.6	24.1		8.7	12.4	53.0	
9.5	58.2	20.5		9.1	22.0	26.5		9.8	21.4	35.9		9.4	10.9	11.6		9.8	18.7	25.3	
9.2	56 13.3	55.8		9.8	32.8	17.1		7.5	22.8	40.9	K	9.2	16.9	36.2		8.6	20.8	29.2	
8.5	18.1	29.2	K	7.3	33.1	10.9	Sj	9.9	29.8	58.9		9.2	26.4	7.8		9.6	27.0	29.9	
9.5	19.4	3.0		9.5	35.6	0.6		9.1	44.3	52.2		9.3	48.3	48.4		9.8	29.3	40.2	
8.9	25.4	38.3	K	9.4	50.7	21.5		8.8	52.4	33.5		9.5	59.5	17.8		9.4	35.4	43.0	
9.1	36.3	40.1		9.3	4 1.1	16.0		9.0	57.0	18.2		9.5	21 5.4	39.5		9.0	36.6	53.5	
9.3	57 4.2	48.1		9.8	1.3	7.7		9.7	58.0	57.7		9.5	25.5	20.6		9.5	29 10.0	51.0	
10	9.9	45.3		9.0	7.0	30.2		9.1	12 7.1	24.0		8.3	26.6	45.4	K	9.5	10.4	21.4	
9.5	23.4	46.5		8.5	13.7	36.1	K	9.8	10.2	37.4		9.1	42.5	22.7		9.5	17.6	47.8	
8.2	26.9	55.2	K	9.4	18.2	35.0		6.2	18.4	43.0	K	9.5	50.5	28.1		9.6	26.0	25.7	
8.1	34.3	50.5	K	9.7	35.6	8.6		8.0	26.0	21.1	K	6.3	52.4	16.2	K	9.0	30.0	57.1	
9.4	39.2	29.3		9.6	43.4	18.0		9.8	48.1	17.4		9.3	22 14.9	38.2		8.7	37.5	51.0	K
9.7	46.4	58.5		9.2	5 7.2	40.2		9.2	53.3	57.7		9.1	20.9	51.4		8.2	38.2	42.0	K
9.0	51.1	22.3		9.5	10.8	9.0		10	13 0.5	39.1		9.4	43.0	30.1		7.0	39.9	12.7	L
9.4	52.9	10.7		9.4	13.8	56.3		8.5	4.7	53.1	K	9.2	52.0	46.4		9.8	44.6	3.5	
9.5	54.4	8.3		9.4	15.9	33.9		9.2	4.7	33.9		9.8	52.4	42.6		8.5	54.1	2.0	
8.5	58 2.8	17.4		9.7	16.7	28.7		9.0	30.6	14.4		9.5	54.3	47.9		9.7	58.2	21.6	
10	3.2	13.4		9.4	32.1	0.1		9.5	56.2	3.6		7.0	54.5	59.4	K	8.9	30 2.1	15.0	
9.5	17.9	42.9		9.4	41.4	43.0		9.3	57.3	37.6		9.7	23 2.0	44.8		9.8	22.2	7.1	

2601—2660				2661—2720				2721—2780				2781—2840				2841—2900			
8h		—9°		8h		—9°		8h—9h		—9°		9h		—9°		9h		—9°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.8	30	39.0	55.2	9.4	41	30.7	46.1	9.5	54	45.8	26.3	9.0	8	46.7	29.3	7.5	21	1.7	23.6 K
9.3		43.7	41.9	9.5		35.9	19.2	10		52.7	57.8	9.3		54.8	18.7	9.2		12.5	40.7
9.4		53.0	2.5	8.8		36.9	10.0 M	8.8		55.5	8.5 K	9.6		54.9	4.1	7.0		16.1	21.1 K
9.6	31	0.7	32.9	10		40.0	32.3	9.2	55	9.6	58.9	9.2		58.3	38.3	7.6		17.8	41.6 K
9.3		30.7	27.7	9.6	42	17.1	16.5	9.4		26.2	57.7	9.0	9	25.7	22.7	7.5		38.7	38.1 K
9.6		45.4	59.6	9.0		29.8	16.4	8.6		58.2	41.3	10		26.1	19.1	9.5	22	12.0	35.6
8.0		53.7	31.4	9.1		44.5	36.4	9.7	56	7.0	42.2	9.2		38.3	4.6	9.3		20.9	35.0
9.1		56.3	44.2	9.5		49.8	7.9	9.3		8.1	40.0	7.4		56.0	1.1	9.2	23	20.3	31.1
9.8	32	12.5	43.5	9.1		54.4	22.1	10		9.7	45.6	9.4	10	42.9	26.0	9.7		30.7	31.8
8.0		22.6	4.1 K	9.1		57.9	15.9	9.8		39.6	47.4	9.2	11	15.3	6.4	8.8		51.3	4.3 K
9.4		38.1	32.6	8.8	43	8.2	50.5 M	9.4		39.9	29.4	10		27.6	26.0	9.3		53.9	36.5
7.7		42.8	4.6 K	9.8		16.7	45.9	9.1	57	27.1	31.5 K	7.8		42.9	48.6 K	9.0		57.9	11.3
8.0		44.2	58.2 K	9.1	44	15.9	27.0	7.0		57.0	32.8 K	9.1	12	3.6	44.5	9.3		59.7	52.9
9.5		44.3	18.0	9.5		18.8	40.1	9.1	58	5.1	6.7	9.8		6.9	54.5	8.0	24	25.6	21.3 K
9.4		51.2	42.4	9.0		25.4	14.1	8.3		8.2	7.9 Sj	10		14.7	28.6	9.4		32.5	18.4
9.5	33	0.0	5.0	9.2		43.2	34.5	9.3		22.1	6.6	9.7		32.2	6.8	5.8		35.0	54.8 K
9.2		22.5	20.4	9.6	45	16.0	31.3	9.4		29.7	19.3	9.2		41.7	12.3	9.5		47.6	52.9
9.1		26.0	12.1	8.9		25.9	21.5 K	9.4		39.7	19.3	9.8		44.4	52.3	5.5		52.1	44.1 K
8.9		47.5	3.6 K	8.3		28.9	24.8 K	8.1	59	10.2	33.4 K	9.1	13	4.1	19.1	9.3	25	4.0	13.7
9.5		51.3	48.6	9.0		41.9	21.2 M	7.3		30.1	10.6 K	9.8		4.4	55.4	9.5		30.5	23.5
7.8		53.7	56.2 K	9.4		56.2	20.7	8.2		40.8	42.4	7.3		16.3	0.0 K	8.9	26	1.5	38.0
9.4	34	1.5	44.7	9.6	46	41.9	56.7	9.2		47.1	2.8	9.3		35.1	16.3	9.9		2.4	25.1
8.7		33.3	34.6 K	9.7		47.1	54.3	9.5	0	8.3	44.0	9.8		54.4	50.7	8.3		4.1	28.8 M
9.2		44.0	58.2	9.3		49.6	21.5	9.8		42.4	43.1	9.5	14	10.7	17.2	10		13.5	40.1
9.1		55.1	21.0	9.4	47	11.8	12.5	9.6		42.7	3.2	9.5		15.2	17.6	9.5		25.1	24.4
9.8	35	6.6	41.6	9.0		13.5	12.4	7.4		44.0	54.7 K	9.4		28.8	30.9	9.6		34.0	26.1
9.8		10.7	34.3	9.8		19.2	49.0	7.5		46.1	16.4 Sj	9.8		48.2	33.8	9.5		35.8	38.1
9.7		11.5	51.6	9.8		44.9	59.2	9.2	1	13.5	35.7	7.9		49.1	48.7 K	9.4		39.1	21.4
9.5		42.9	55.7	9.4		51.1	41.0	8.8		19.8	52.6 K	8.1	15	0.1	17.2 K	8.7		43.7	41.7 K
6.3		53.5	17.2 K	9.5		51.7	43.4	9.0	2	3.7	32.9	10		12.9	13.0	9.4		48.5	38.7
8.9		56.4	2.3	9.5		58.0	29.2	9.4		6.5	47.0	9.5		17.2	17.1	8.2		56.6	55.4 K
9.4	36	0.4	55.1	9.2	48	12.5	33.0	9.2		9.1	25.4	9.6		22.4	11.9	9.4	27	0.0	53.5 M
9.5		5.2	23.6	7.5		26.9	22.5 M	8.8		9.8	7.2 Sj	9.3		27.5	20.9	8.3		26.2	19.3 K
10		9.8	27.0	8.8	49	31.4	22.7	9.3		34.0	48.0	9.4		37.7	37.4	9.6		27.2	28.5
8.9		26.5	11.8 K	8.5		46.0	47.2	7.3		38.6	21.1	9.5		44.6	1.2	9.9		46.3	3.6
9.6		42.7	50.9	8.5		59.8	4.1 K	9.2	3	26.7	10.3	6.8		46.5	13.3 K	8.9		53.6	22.0 K
9.5		42.9	38.7	9.8	50	22.9	43.6	9.4		27.1	50.6	9.8	16	16.3	37.6	9.5	28	4.3	11.5
10	37	11.0	1.2	9.8		24.0	36.3	9.5		29.5	39.2	9.2		25.8	58.0	10		6.4	39.9
9.4		19.0	27.2	9.7		25.8	18.5	9.8		36.2	5.5	9.9		41.3	13.9	9.6		9.0	53.1
9.5		29.0	5.1	9.9		27.5	20.4	9.2		59.5	32.2	9.5	17	17.4	12.0	9.1		14.5	39.9 M
8.8		33.3	57.8	7.3		29.9	31.7 K	9.0	4	8.8	59.0	9.7		19.8	34.2	9.9		34.1	55.0
9.5		55.4	0.6	9.4	51	4.0	39.8	9.8		9.9	3.6	9.3		34.8	17.1	9.7	29	10.9	57.1
9.4		59.5	46.6	9.2		12.3	30.4	9.4		26.2	17.1	9.2		39.2	52.9	9.4		20.7	1.1
10	38	13.2	35.0	9.5		21.8	19.7	9.1	5	5.2	11.7	9.4		43.8	31.9	9.1		27.5	14.9
9.7		34.6	54.8	9.6		24.6	22.8	9.3		27.0	46.6	8.7		55.2	44.6	9.1		41.6	0.6
9.7		37.8	55.7	10		51.4	47.6	9.2		28.5	25.8 M	8.7	18	10.3	13.2 K	9.3		49.1	48.7
9.1		58.4	8.0	8.6		53.3	48.8	9.3		30.1	0.1	9.0		14.0	34.7	9.4		54.8	11.4
7.6		59.8	43.3 K	9.7	52	3.5	35.9	9.3	6	14.5	47.7	9.0		30.1	16.4 K	9.3	30	9.0	38.4
9.2	39	2.0	37.7	9.1		28.1	28.9	9.8		15.2	21.9	9.1		33.4	11.1	9.4		31.6	57.4 M
9.5		8.9	16.7	9.1		35.5	56.7	9.3		27.3	39.7	8.3		43.5	52.1 K	9.1	31	0.2	59.5 M
9.1		15.8	43.2	9.1		56.2	56.5	10		50.4	37.6	9.8	19	0.5	12.7	10		1.5	33.4
8.6		36.5	42.1 M	9.1		56.6	35.0	10		58.8	36.0	9.3		3.6	22.3	9.8		47.8	35.3
10		49.3	11.4	9.3	53	17.4	26.3	9.8	7	3.7	2.4	9.8		10.7	50.3	8.9		52.9	46.4 Sj
9.4		49.5	38.5	9.5		19.9	39.7	9.3		14.2	39.0	9.2		22.1	27.3	9.4	32	12.5	37.4
9.3		51.1	8.4	8.7		23.7	1.5 K	9.6		35.4	4.9	8.8		39.9	27.5 Sj	9.2		12.8	33.4
9.4		59.7	2.9	10		37.7	53.8	9.2		39.1	28.2	9.3	20	9.9	52.2	9.8		38.8	17.7
9.3	40	25.0	52.0	9.4		43.2	16.8	8.9	8	9.4	31.0	9.3		29.3	52.5	9.4		42.7	33.6
9.5		25.5	38.4	8.9	54	0.2	56.0	9.4		16.6	0.6	9.8		33.2	56.3	5.9		43.1	55.0 K
9.8		52.3	48.0	9.5		17.3	34.9	9.0		36.4	53.5	9.8		34.8	59.0	9.0		46.3	36.5
9.5		57.4	2.8	9.3		22.4	7.7	9.6		41.8	14.6	8.0		46.0	10.0 K	9.5	33	11.9	44.3

2901—2960					2961—3020					3021—3080					3081—3140					3141—3200				
	9h		—9°			9h—10h		—9°			10h		—9°			10h		—9°			10h		—9°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.6	33	32.4	42.5		9.9	48	27.2	41.2		9.1	5	45.7	14.1		9.4	20	54.9	16.8		8.2	40	51.8	12.6	K
10	34	22.4	44.0		9.0		32.2	9.4	K	9.7		59.1	54.9		7.3	21	16.4	8.7	K	9.1	41	19.0	4.5	M
7.2		22.5	50.6	K	9.5		46.3	44.3		9.5	6	16.2	41.4		9.4		21.3	30.2		9.6		21.1	4.5	
9.5		30.0	30.3		9.8		54.4	48.8		10		18.2	20.3		9.6		24.8	27.0		9.5		59.6	52.2	
9.5	35	7.8	37.0		9.5	49	34.3	6.1		8.3		29.3	4.3	M	9.5		25.9	32.3		9.0	42	1.2	9.2	K
9.8		17.5	8.5		8.4		38.7	39.5	K	9.7		50.3	46.3		10		38.0	59.1		9.9		18.0	16.4	
9.6		34.6	20.1		8.7	50	14.3	12.1	K	9.0		59.0	17.9	M	9.4		46.5	46.4		5.5		28.8	4.7	K
9.0		45.2	31.5		8.9		31.2	3.3	K	9.5	7	4.0	5.6		9.8	22	5.7	33.0		8.4		35.1	29.2	K
9.5	36	16.1	30.4		9.5	51	20.7	10.7		9.3	8	17.7	49.8		9.6		9.5	29.8		9.8		39.0	54.3	
9.5		24.5	27.1		9.1		54.5	30.9		9.0		58.9	1.1		9.5		17.9	51.1		9.8		58.1	2.3	
8.7		44.8	19.8	K	9.2	52	20.3	6.5		9.4	9	11.4	11.8		9.8	23	15.8	19.3		9.5	43	5.6	50.0	
9.1	37	38.4	7.0		9.8		30.1	56.8		10		28.9	0.3		9.8		45.8	17.4		9.5		14.0	0.5	
9.8		52.3	44.8		8.8	53	37.7	42.1	M	9.8		31.9	13.4		9.7		57.8	34.5		9.5	44	16.5	39.7	
9.1		55.5	4.9		9.5	54	11.4	27.6		9.0		38.3	2.9	K	8.6	24	37.9	6.2	K	9.5		21.5	24.2	
10	38	13.8	40.7		8.8		51.8	42.6	K	9.4	10	1.2	43.1		8.7		47.6	30.3	K	9.8		31.9	2.3	
9.4		42.1	26.0		7.5	55	1.8	44.1	K	9.5		22.4	11.8		9.2	25	0.0	50.4		9.7		44.3	32.1	
9.2	39	1.9	43.7	B	9.0		11.3	9.0	Sj	9.0		22.9	1.7		9.1		42.4	33.8	M	8.9		45.4	11.2	K
9.3		21.8	40.5		9.1		25.2	20.0		9.9		38.2	56.7		9.4	26	2.3	1.1		8.9	45	4.5	7.0	K
9.4		28.9	46.9		8.6		47.0	32.3	K	9.8		41.2	25.1		9.2		25.4	1.9	M	9.3		18.0	20.1	
7.9		32.4	35.3	K	9.7		50.8	39.9		9.1		50.7	44.2	Sj	9.6	27	1.6	31.6		10		42.4	15.5	
9.5		45.7	32.3		9.3	56	13.0	54.6		9.5		55.2	30.8		7.3		5.3	8.9	B	9.5		51.0	3.6	M
7.0		59.7	51.0	K	9.4		18.8	20.0		9.6	11	10.3	56.5		9.5		32.3	22.1		10		59.1	28.9	
9.4	40	2.0	17.1	M	10		33.8	18.5		9.5		49.8	10.8		9.7		47.9	6.3	M	8.5	46	5.0	59.0	K
9.3		14.4	33.0		8.0		40.7	27.2	L	9.2	12	4.3	13.7		9.8	28	16.5	37.2		8.8		25.3	25.0	K
9.5	41	3.0	31.8		8.6		56.3	54.0		9.4		24.4	28.1		9.3		17.3	4.1		9.5		50.9	1.8	
8.7		0.1	30.7	M	9.5	57	0.7	15.6		9.3		40.1	57.7		9.8		20.8	13.9		10		58.0	47.6	
9.9		10.4	25.8		9.5		11.4	52.2		9.8		42.2	1.6		9.2		57.9	43.2		8.0	47	33.9	18.8	K
6.8		36.6	14.5	K	8.4		21.4	48.3	K	9.5		47.3	6.4		6.5	29	5.0	49.6	K	9.4		53.6	27.4	
9.7		37.3	41.5		9.8		43.1	53.6		9.6	13	18.1	22.1		8.8		30.0	5.0	K	9.7		57.9	28.5	
9.7		44.0	42.5		8.5	58	20.9	46.0	K	9.5		55.0	35.5		9.5	30	29.8	57.5		9.6	48	32.6	33.8	
8.0		47.2	53.5	M	9.5		37.4	28.5		9.5	14	10.8	58.7		9.6		59.9	30.5		9.0		52.9	43.1	
9.5		56.4	17.3		9.1		39.2	59.3	K	7.7		31.1	2.6	Sj	9.4	31	0.7	27.9		8.0	49	5.4	51.0	K
9.5	42	13.7	52.8		9.4		55.9	42.9		9.4		44.8	30.7		8.5		41.7	23.6	K	9.0		36.9	16.5	M
9.6		18.5	38.1		9.8	59	8.6	22.3		9.5		47.7	35.2		9.8	32	17.2	35.3		8.3		50.3	11.3	K
8.9		22.6	52.8	M	9.8		10.9	59.1		10	15	7.5	48.5		8.6		21.2	10.3	K	9.6	50	5.5	30.4	
9.5		44.7	34.1		9.2		43.5	0.3		9.2		33.6	11.9		9.8	33	6.6	30.1		9.5		19.3	11.0	
9.8	43	2.7	17.4		9.2		53.1	13.5		9.1	16	1.6	8.9	K	9.2		31.6	33.9	K	9.8		24.3	29.2	
8.7		4.8	32.4	K	9.1	0	11.3	49.8	M	9.0		17.8	36.0		9.0		49.3	19.6	K	9.3		55.4	59.2	M
8.5		5.2	22.7	K	9.2		18.6	12.8		9.4		30.2	42.6		9.5	34	18.6	35.8		9.5	51	8.8	13.1	
10		36.1	18.4		9.5		29.8	28.9		9.3		48.5	13.0		9.0		32.6	4.6	K	9.8		17.0	43.8	
10		46.7	48.7		10		42.6	17.0		9.4		48.6	43.9		10		46.6	15.4		9.0		43.9	55.8	K
10		56.0	56.2		9.8		51.7	26.0		9.0		52.9	10.6	Sj	9.3	35	9.2	6.6		6.8	52	2.5	33.1	K
10		58.7	57.9		9.1	1	1.1	11.9		9.4	17	1.4	39.7		9.8		20.7	4.9		9.1		14.3	44.2	M
9.6	44	31.0	56.0		9.5		12.0	10.9		9.4		6.6	7.8	K	9.9		52.1	11.3		9.5		34.9	18.9	
8.0		55.4	10.0	K	9.5		21.6	14.2		9.4		14.3	27.3		9.6		56.7	52.7		8.5	53	9.2	9.4	K
8.7	45	9.3	52.9	K	9.3		26.1	16.0		9.3		40.9	5.8		9.6	36	7.8	46.0		9.8		23.8	43.7	
9.9		17.0	21.3		9.8	2	0.8	34.0		8.0		44.0	3.6	Sj	9.8		36.1	38.4		9.4		36.3	14.5	
9.9		17.7	11.2		8.8		15.6	13.3	K	9.1		50.6	54.8		9.3		44.5	54.4	M	9.7		37.1	2.0	
9.6		22.1	40.1		9.9		41.9	55.1		9.4	18	4.1	10.5		9.4	37	6.8	29.5		9.7		55.8	31.6	
9.1		37.0	31.3		9.7		45.7	43.3		9.5		5.3	30.3		8.9		18.7	58.7	K	9.2	54	7.3	41.7	M
9.5		38.5	27.6		9.1	3	1.6	13.0		9.7		24.0	6.2		9.8		18.7	7.5		9.1		24.2	11.3	M
9.4		54.3	2.8		8.7		10.5	38.4	K	8.3		40.5	17.9	K	9.4		22.3	28.6		9.7		30.5	27.7	
7.1	46	14.4	13.2	K	9.4		21.5	0.4		9.6	19	15.9	13.6		8.5		32.6	11.0	K	7.8		46.8	4.5	K
9.8		18.5	49.5		9.5		31.6	6.4		10		18.2	10.8		7.1	38	34.3	57.1	K	10	55	6.7	48.7	
8.6		38.0	25.5	K	9.1	4	13.6	10.5		9.6		30.7	49.1		10		51.1	30.2		7.0		14.7	12.7	K
8.2		49.2	54.4	K	9.6		42.3	28.3		9.5		42.5	21.6		9.1	39	10.0	40.9	M	9.7		21.2	12.7	
9.5		59.0	19.2		8.3	5	10.4	30.4	M	9.3		48.6	52.2		9.5		29.2	47.6		9.5		36.7	14.7	
10	47	31.9	26.1		10		20.0	51.7		9.8		52.0	21.9		9.7		42.9	50.7		8.7	56	32.3	32.8	K
8.6		51.4	20.4	K	9.7		34.5	0.6		9.5	20	33.7	27.5		10	40	30.5	15.8		9.4	57	47.7	43.8	
9.4		57.3	6.1		10		34.8	13.2		9.5		36.6	56.5		9.5		44.0	15.3		10		57.2	37.0	

3201—3260				3261—3320				3321—3380				3381—3440				3441—3500			
	10h—11h	—9°			11h	—9°			11h	—9°			11h—12h	—9°			12h	—9°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.2	57 58.7	30.5	L	9.3	12 23.0	52.9		10	27 12.4	45.5		8.5	43 57.3	10.1	K	9.6	1 44.3	46.5	
10	58 23.5	7.7		9.2	35.4	15.7	M	9.4	54.1	6.5		9.8	44 13.7	39.1		9.4	45.2	32.0	
10	29.1	25.4		9.1	37.6	27.0		9.8	28 19.5	19.4		9.4	45 2.2	23.9		9.8	48.0	14.7	
9.3	47.2	48.6		9.8	59.5	16.8		9.0	47.3	35.4		9.6	7.3	12.7		9.6	2 0.1	56.8	
10	50.1	22.0		6.3	13 13.2	30.3	K	8.2	29 4.6	38.0	K	9.8	17.3	30.4		9.2	3.2	35.2	M
9.8	59 32.8	28.4		9.1	54.8	0.3		9.2	31.0	27.3		9.3	44.4	5.5		9.8	4.3	19.6	
8.0	52.1	16.4	K	9.8	14 40.4	22.4		9.8	32.2	12.0		9.0	46 0.2	57.9	M	9.3	26.2	34.9	M
9.8	0 2.7	26.5		9.3	47.7	38.3		9.2	43.7	18.6		10	31.3	24.3		9.3	3 0.8	50.8	
9.3	5.6	12.7	K	9.5	15 9.2	39.6		8.7	30 19.9	59.1	K	9.5	41.2	15.2		9.5	14.9	17.2	
9.8	18.6	1.5		9.3	10.6	42.3		8.2	34.8	2.0	K	9.5	47 35.4	11.2		9.2	19.3	47.2	
9.4	19.9	33.1		9.5	12.4	8.1		9.4	31 23.0	10.2		9.5	41.7	8.1		9.0	29.5	34.4	M
9.9	20.2	48.9		9.8	22.2	58.3		9.3	34.6	4.9		9.5	43.5	48.0		8.8	42.8	54.1	K
8.9	29.1	22.2	K	9.7	16 20.6	44.7		9.0	49.4	43.9		9.5	48 29.9	27.9		9.5	51.4	54.7	
9.8	44.3	4.1		8.2	27.9	37.6	L	9.7	53.5	32.4		9.0	47.2	57.0		9.4	57.9	17.4	
9.4	53.2	38.1		8.8	47.6	53.0	M	9.1	56.4	18.9		9.8	49 1.6	51.8		9.5	58.4	14.5	
9.9	1 15.4	14.6		9.8	17 9.8	23.9		9.4	32 9.8	31.9		7.2	20.6	54.7	L	9.0	4 6.8	56.5	
9.5	23.7	4.5		9.5	32.1	13.7		9.8	21.9	32.5		9.4	37.2	30.4		7.3	13.8	45.6	M
9.8	39.6	20.8		9.6	34.3	33.5		9.5	58.8	52.8		9.0	50 5.0	30.1	K	10	36.1	15.7	
8.6	40.5	29.1	K	9.4	44.6	40.0		9.5	33 1.3	26.5		9.6	13.1	49.8		10	54.4	30.4	
8.8	41.3	4.6	K	9.5	45.5	47.3		9.6	1.8	34.2		8.0	23.2	21.0	K	9.8	5 3.8	38.6	
8.3	2 14.2	37.0	K	9.8	59.4	22.6		9.5	17.9	57.5		9.1	25.5	34.6	M	9.6	23.2	32.7	
9.5	40.7	30.1		9.8	18 11.1	48.4		7.3	28.2	6.8	K	9.9	27.3	1.7		10	28.3	55.8	
9.5	3 0.0	15.8		7.3	56.5	4.6	K	8.8	31.6	0.6	K	9.1	47.1	56.5		9.5	6 26.7	47.3	
9.8	12.1	20.7		8.8	58.8	56.9	M	9.3	44.7	18.7	M	9.0	48.2	33.7	K	9.0	34.9	19.9	K
9.8	42.9	42.1		9.7	59.5	11.6		9.4	34 58.5	12.3	M	9.0	59.0	12.7	K	9.8	41.2	46.0	
10	4 9.5	19.8		9.8	19 13.2	28.4		9.5	35 8.2	38.5		9.2	59.2	29.3	K	9.7	56.3	29.6	
8.6	16.1	6.4	K	8.7	26.6	36.5	K	10	8.8	16.1		9.0	51 0.0	8.3	K	8.7	7 25.1	35.7	K
9.9	35.6	46.8		7.8	32.2	8.4	K	9.5	41.3	48.4		6.8	44.7	40.0	K	6.2	43.1	28.2	B
8.7	37.1	5.6	K	9.8	46.7	11.6		8.3	36 24.0	15.9	M	10	45.9	30.7		9.9	56.2	56.3	
9.7	37.4	32.9		9.0	20 33.1	23.6	K	8.0	36.1	49.3	K	9.5	52 11.1	36.5		8.2	8 12.8	27.9	Sj
9.7	45.1	41.0		10	45.5	57.5		8.5	39.8	57.7	K	10	31.6	18.5		9.1	40.8	31.8	K
9.3	59.6	14.1	K	8.8	51.0	26.5	K	9.2	40.0	12.1	M	9.1	53 5.3	41.0	K	8.7	9 7.1	31.0	K
9.8	5 6.1	26.4		9.5	21 9.7	17.3		9.8	37 1.9	11.9		6.4	18.4	37.0	B	8.5	8.8	15.0	Sj
9.4	6.5	45.7		10	15.2	11.8		9.2	19.1	31.9	M	8.5	23.1	9.2	K	9.0	10 22.3	16.3	K
8.4	8.1	21.3	K	10	28.4	52.3		9.8	52.7	55.5		9.9	24.2	19.6		9.9	36.7	52.7	
8.7	8.8	50.9	K	10	50.6	19.8		9.3	54.4	9.1	M	8.7	45.2	4.1	Sj	9.8	37.1	0.2	
8.7	10.5	11.2	K	9.6	22 16.0	28.0		9.7	38 9.4	31.1		9.8	54 25.6	33.8		9.5	39.2	36.4	
8.2	6 35.4	29.0	K	7.0	17.1	15.6	K	9.7	15.6	40.6		9.8	58.5	56.7		9.3	11 17.6	49.1	
10	48.5	25.5		9.4	44.3	27.4		9.7	57.4	28.2		9.4	55 14.5	20.4		9.8	56.1	43.7	
9.9	54.5	4.8		8.9	46.9	50.2	K	9.5	39 1.0	11.6		9.0	14.8	54.2	B	9.0	12 0.2	23.2	M
9.8	7 0.7	59.0		9.4	23 21.0	47.7	M	9.0	29.7	27.9	M	8.5	20.0	50.2	B	9.5	9.2	22.1	
8.5	2.3	3.0	K	10	23.1	32.5		9.4	44.9	23.7		8.0	34.0	56.5	K	9.7	18.2	7.5	
8.7	19.0	7.0	K	9.5	38.7	36.7		9.3	57.3	57.4	M	9.8	51.6	20.6		8.5	45.6	59.4	M
9.1	23.0	21.7	M	9.5	39.4	23.8		9.3	40 9.9	24.3	M	10	57.5	44.8		9.8	13 33.8	29.5	
9.6	38.7	27.4		9.6	24 5.1	15.4		9.2	41 0.0	5.4		6.5	56 34.7	29.5	K	9.1	44.1	56.7	M
9.5	8 13.0	14.8		10	5.7	28.7		6.7	1.2	30.3	K	9.8	39.4	7.5		10	58.7	13.4	
7.5	37.8	49.6	K	9.3	8.0	46.6	M	9.6	1.4	22.2		9.3	57 30.5	39.5		8.9	15 12.0	35.2	
9.5	40.7	28.9		9.1	30.8	47.4	K	9.1	7.0	29.8	K	8.8	33.6	15.7	K	9.5	15.1	50.4	
9.3	41.7	2.7	K	9.8	45.5	24.2		9.5	9.3	54.7		9.4	55.7	0.0		9.6	21.3	47.8	
10	9 15.0	0.7		9.5	50.2	0.6		9.8	20.4	44.0		9.5	58 15.6	3.7		8.0	16 53.0	40.7	Sj
9.4	15.9	9.6		9.5	59.1	12.9		9.8	34.3	38.4		10	51.5	6.9		9.6	17 48.2	0.5	
9.8	19.8	48.7		9.6	25 29.4	37.9		9.5	42.2	48.9		9.7	59 1.6	6.3		8.3	18 6.6	14.1	Sj
9.0	37.8	37.3	M	9.5	32.8	15.6		9.9	42 28.5	55.2		10	17.8	56.1		9.5	19.0	42.5	
9.8	40.5	33.4		9.5	36.0	27.5		9.4	50.4	51.4		8.3	56.9	55.8	K	9.8	25.1	16.4	
10	41.0	8.7		9.5	48.4	38.1		8.9	51.4	11.4	K	9.5	0 16.6	30.4		9.5	54.6	17.0	
9.6	10 23.3	51.2		9.5	26 26.1	55.8		9.8	43 2.5	9.7		9.5	44.4	41.2		9.4	19 2.1	10.0	
9.4	11 5.4	21.8		10	27.2	26.5		9.5	11.4	4.6		9.7	46.1	22.2		9.3	24.4	33.2	M
8.7	23.1	20.0	K	9.2	30.2	29.2	M	8.5	17.9	8.5	K	9.5	58.9	47.4		9.3	35.6	12.8	
9.2	49.5	9.1		9.8	32.6	1.1		9.4	35.0	12.2		9.0	1 5.7	11.7	K	9.8	50.7	2.8	
9.5	12 14.9	20.5	M	9.5	27 8.3	56.8		9.2	47.4	3.6		9.2	28.5	12.5	K	9.3	57.6	9.9	

3413: 18ᵐ31 37′18″.5 B_4, Ep. 1872.80

3501—3560				3561—3620				3621—3680				3681—3740				3741—3800			
	12h	−9°			12h	−9°			12h−13h	−9°			13h	−9°			13h	−9°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	20 2.9	57.1		8.9	40 32.5	14.9	K	9.0	58 50.9	16.6	Sj	9.3	16 47.8	20.4	M	9.9	32 35.3	40.1	
8.0	22.1	22.0	K	10	57.6	4.4		9.1	56.4	40.8	M	9.7	48.2	11.3		9.5	39.2	27.7	
9.4	21 55.0	15.3		9.8	41 52.4	26.9		9.3	58.0	50.0		8.7	48.7	40.7	M	9.5	33 23.2	22.3	
9.0	22 1.4	50.5		9.4	56.8	57.6		10	59 20.8	1.9		10	17 14.7	36.5		10	29.6	49.8	
9.3	11.4	56.0		9.5	42 36.2	21.7		9.4	55.1	16.0		9.1	14.7	40.0	M	8.0	43.7	43.2	K
9.2	35.4	22.7		8.5	43 1.6	46.8	M	10	0 7.8	2.6		9.9	27.3	0.6		10	48.8	54.4	
9.8	52.0	40.3		10	7.0	28.4		10	8.8	16.3		10	30.1	51.4		9.8	50.8	14.6	
7.8	23 9.2	1.1	K	9.0	50.0	32.4	M	5.8	18.3	57.5	K	9.5	38.8	4.1		9.2	52.6	12.8	
9.5	24 10.5	39.2		6.5	50.4	32.4	K	9.7	24.5	4.1		8.8	18 25.7	46.9	Sj	9.5	34 47.1	4.7	
9.4	11.6	23.9		9.5	45 21.0	25.9		9.8	50.3	47.7		9.8	36.3	5.9		9.1	57.6	40.9	M
9.4	48.2	23.1		8.8	24.1	46.5	K	10	59.3	50.4		9.8	52.1	14.6		9.8	35 24.2	34.5	
9.8	25 45.7	8.2		10	26.2	9.3		9.9	1 1.8	40.8		8.8	19 17.9	50.3	K	10	29.0	29.4	
8.8	56.6	22.2	K	9.5	27.7	33.1		9.7	31.8	28.0		10	22.3	30.5		9.4	29.6	51.7	M
9.4	26 9.0	28.5		9.5	30.4	25.8		9.9	35.6	50.6		10	39.9	54.8		9.8	40.5	22.9	
9.8	14.2	4.7		9.0	41.1	23.6	M	10	2 9.4	13.0		9.1	41.0	53.6	K	10	36 2.4	32.2	
9.4	27 0.8	34.7		9.2	41.2	38.9		6.5	10.7	33.0	B	10	49.8	6.0		9.6	4.1	25.7	
9.3	7.7	15.6		9.8	46 11.2	13.1		9.5	40.3	45.4		10	20 33.9	34.2		9.0	11.0	7.7	M
9.8	35.3	52.2		10	14.6	43.4		9.4	58.8	9.2		10	35.7	27.8		9.5	47.4	39.9	
9.0	51.6	48.7		8.6	32.1	18.9	M	9.8	3 4.6	28.9		9.7	43.6	17.4		8.5	47.8	25.2	
8.5	28 38.1	35.3	M	9.4	44.0	52.7		8.0	15.8	19.7	K	10	52.6	53.1		10	56.5	58.0	
9.5	29 34.7	18.1		9.5	49.5	56.1		8.0	46.0	44.2	B	8.8	21 40.4	37.0	M	9.5	37 9.4	12.0	
9.6	30 5.1	10.5		9.4	51.7	0.8		9.6	4 46.6	20.4		8.5	57.7	57.5	Sj	10	17.4	4.5	
9.8	16.6	15.1		9.5	47 12.5	23.8		10	6 32.3	3.9		10	22 7.3	0.2		10	23.5	57.8	
9.1	17.7	4.3		8.3	18.6	38.6	K	10	42.6	1.0		9.6	23 39.3	45.5		10	28.6	6.1	
9.1	58.5	45.3		9.4	53.6	36.5		9.4	7 6.4	44.0		9.4	24 4.8	9.8		10	32.6	56.3	
9.8	31 3.2	11.4		9.3	48 19.3	20.4	M	7.5	9.9	35.9	K	8.2	11.3	30.7	K	9.9	37.6	46.0	
9.8	27.7	0.2		9.5	22.7	5.1		9.0	16.4	26.1		9.8	14.0	4.2		9.0	40.1	47.3	B
10	40.6	1.9		9.6	23.3	33.0		8.5	18.4	39.5	B	10	32.3	13.4		9.0	42.6	48.2	B
9.3	47.7	6.4		9.8	53.2	12.3		9.5	19.8	26.4		9.5	57.3	16.5		9.5	38 12.0	49.5	
9.5	32 2.6	22.5		9.1	49 32.6	36.0		9.1	34.1	17.9		8.7	58.1	27.0	K	9.3	25.6	37.5	M
9.7	47.6	7.8		10	54.0	56.1		9.4	8 29.8	51.6	M	5.8	25 19.7	25.0	K	9.5	39 3.0	31.2	
9.2	33 24.4	35.6		9.5	50 10.1	5.6		8.7	38.2	49.5	Sj	9.0	36.2	49.7		9.7	27.9	14.5	
10	29.9	39.3		9.5	17.6	16.1		9.5	9 23.9	35.7		9.8	26 19.6	23.7		9.8	29.5	26.8	
8.5	39.4	2.0	Sj	10	51 32.4	18.2		7.0	52.4	46.9	K	9.3	28.2	8.3		10	31.6	46.7	
9.9	57.5	3.8		7.7	35.1	3.2	B	9.8	55.0	18.2		9.6	42.1	17.6		9.5	43.5	11.8	
9.3	34 12.4	58.5		10	52.0	3.6		9.4	10 3.1	39.5	M	9.2	53.4	29.1		9.8	40 10.4	58.5	
9.8	27.4	30.1		9.8	52 11.9	49.0		9.6	14.5	11.0		9.8	27 3.7	58.8		8.7	13.0	27.5	M
9.8	35 0.6	28.3		9.5	13.4	43.2		10	31.4	38.8		10	5.6	34.4		9.2	27.4	13.5	
9.5	7.6	18.5		9.1	20.9	33.1		10	32.7	32.7		8.8	11.8	51.9	M	9.3	56.4	59.0	
9.5	19.8	38.8		9.1	31.5	22.8	M	9.5	11 30.3	40.4		10	38.6	42.7		9.5	57.3	57.9	
9.6	47.6	29.3		9.7	53 13.0	19.5		9.2	34.0	15.9	M	9.0	39.4	31.7		9.8	41 14.5	50.1	
9.0	36 19.1	15.7		9.5	22.5	27.9		9.0	37.8	12.5		9.5	45.7	11.9		10	24.5	47.1	
9.6	22.1	47.0		10	30.6	9.3		9.1	42.1	7.4		9.6	51.6	59.6		9.5	31.2	11.0	
10	44.9	38.1		9.3	58.4	44.5		8.7	12 0.2	1.9	B	8.3	28 3.9	35.2		9.5	31.4	28.0	M
9.2	45.8	40.6		9.0	54 6.1	2.9	Sj	8.0	51.7	25.7	K	8.0	16.7	2.4	K	9.6	33.3	7.7	
9.2	52.8	52.8		9.9	11.0	10.6		10	13 8.2	49.2		9.0	32.1	56.5	M	9.8	33.5	46.7	
8.3	56.5	17.5	M	9.0	28.2	40.1		10	14.4	17.6		10	42.3	4.7		9.5	43.2	13.9	
9.5	37 9.3	35.5		10	31.6	1.7		10	26.3	26.5		9.3	44.3	35.3		10	55.8	6.7	
10	58.4	33.8		9.8	34.5	18.4		7.3	37.0	14.4	K	8.8	29 17.2	33.1	K	8.5	43 20.9	47.1	B
9.4	38 27.0	16.2		9.6	45.2	32.8		9.1	51.8	42.0	M	9.8	22.2	44.0		9.3	40.0	39.6	M
9.8	33.2	15.2		9.5	56.2	29.1		9.5	14 17.2	55.1		9.4	41.1	12.3		9.8	53.8	0.2	
9.9	34.0	28.3		9.5	55 43.9	24.3		10	29.1	49.2		9.8	30 5.2	50.1		9.3	44 24.9	8.8	
9.2	58.5	4.1		10	57 8.4	36.0		9.5	45.2	55.4		9.5	14.9	30.8		7.3	45 12.3	57.7	B
10	39 0.1	1.3		9.8	24.1	31.6		9.8	15 3.3	35.3		9.8	52.1	18.1		9.2	24.9	6.5	
9.5	35.3	57.5		9.5	52.4	33.0		9.0	24.1	56.4	M	7.5	31 2.6	8.7	M	9.8	37.3	59.0	
9.8	48.9	30.8		9.3	55.6	19.9		9.1	39.9	35.7	M	8.6	27.3	39.1	M	9.6	46 8.4	2.3	
9.5	59.1	59.8		8.9	58 7.8	43.4	M	10	48.2	40.8		7.8	56.0	22.6	K	9.3	11.5	38.5	
8.8	59.3	27.7	M	9.8	21.9	16.5		10	16 9.5	22.3		8.6	32 6.2	30.6	M	9.7	13.0	39.4	
9.8	40 5.4	25.0		9.8	29.8	51.0		9.6	10.2	42.8		9.1	13.1	57.0	B	10	41.4	47.6	
9.5	28.3	57.8		9.7	31.2	0.7		9.5	32.5	15.4		10	28.8	50.9		9.8	53.3	12.2	

3595: 35′42 3′24″0 B_5, Ep. 1873.31

3801—3860					3861—3920					3921—3980					3981—4040					4041—4100				
	13h—14h		—9°			14h		—9°			14h		—9°			14h		—9°			14h—15h		—9°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.8	47	7.1	23.7		9.4	1	2.6	10.3		8.6	15	23.4	46.7	K	9.6	34	33.3	23.7		10	50	57.6	24.5	
9.0		8.3	11.5	M	9.0		5.1	7.2	Sj	9.4		37.7	16.2		9.7		42.1	30.9		9.5	51	8.4	8.0	
9.4		11.1	6.3		9.0		9.0	8.9	Sj	10		54.6	53.0		8.4	35	32.0	57.8	K	8.8		25.7	22.2	Sj
7.0	48	12.3	2.5	K	9.5		15.5	49.1		9.6		54.8	0.8		6.3		39.3	4.7	K	9.5		31.7	44.8	
9.5		20.8	46.0		6.5		17.2	38.4	K	8.8	16	19.9	45.4	K	9.4		57.9	39.8		9.1		33.5	59.1	M
9.6		51.7	55.7		9.4	2	15.8	30.8		9.8		30.2	23.1		7.0	36	58.7	4.9	K	9.7		39.8	59.5	
7.8		57.2	19.3	K	9.0		26.0	17.6		9.3		44.5	20.9		10	37	16.8	53.0		9.9		42.2	20.4	
9.6	49	7.7	59.5		9.9		55.5	6.3		10	17	26.0	54.7		8.8	38	36.9	53.2	M	9.4		45.2	40.1	
9.2		11.9	59.5	B	9.0	3	26.1	45.7	M	9.4		26.8	32.3		9.3		43.6	18.1		8.8		48.3	16.5	M
9.9		12.6	34.9		8.5		35.6	47.1	K	10		37.5	11.8		9.1	39	11.7	21.8	M	10	52	24.7	59.1	
9.3		18.2	32.8		10		38.2	5.6		9.3		56.7	18.8		9.1		20.5	9.1	K	9.3		32.1	55.8	
9.9		33.1	9.6		9.7		41.2	32.8		9.0		58.6	6.8		9.5		20.7	6.0		9.8	53	18.2	52.0	
9.3		48.4	48.3		8.7		47.2	55.1		9.4	18	9.3	49.2	M	9.4		24.6	19.0	M	9.4		18.9	32.3	
10		54.5	25.7		8.6	4	12.9	16.5	K	10		16.2	18.6		9.8		51.9	51.6		9.4		20.6	59.2	M
9.9		56.3	2.8		9.6		22.7	31.7		9.6		19.6	30.4		9.3		55.4	59.0	M	9.6	54	17.9	58.3	
9.6	50	20.0	14.0		9.4		37.0	5.2		9.4		26.8	10.4		9.0	40	9.3	53.5	K	9.4		36.8	3.2	
9.1		22.2	23.0	M	7.2		50.5	12.6	K	10		51.1	13.6		9.5		59.4	42.8		9.7	55	0.0	43.4	
9.8		29.8	1.2		4.0	5	10.3	36.0	Sj	10		53.1	49.8		9.6	41	1.3	46.6		7.8		0.9	49.1	B
9.1		33.9	43.4		9.9		11.2	29.9		9.2	19	7.2	54.6		9.3		7.1	22.0	M	10		22.0	38.4	
10		34.4	2.8		10		18.5	7.5		9.4		9.0	50.0		9.1		14.9	22.4		9.3		34.8	31.8	
9.2		51.8	54.9		9.0		35.8	1.7	M	9.4		20.5	28.4	M	9.6		23.6	31.3		9.4		38.0	46.3	
9.8		58.7	11.5		9.4	6	11.6	51.7		10		43.3	51.1		9.5		35.8	48.8		8.9		50.0	15.6	K
10	51	11.3	45.4		10		25.2	19.1		8.7		44.8	33.0	Sj	9.7		47.2	36.6		9.3		54.7	52.0	
9.8		31.6	42.8		9.6		26.2	35.4		10	20	8.2	28.8		9.6	42	4.9	50.4		9.3	56	13.7	29.5	
9.8		32.2	57.0		10		30.7	51.1		6.5		47.4	21.1	K	9.1		40.8	43.3	M	8.8		41.6	37.0	M
9.8		44.9	39.2		10		52.0	6.6		9.0		53.4	33.0		9.4		47.4	48.9		9.7		52.9	19.0	
9.1	52	4.3	43.7		9.9		56.5	3.0		8.8		55.0	33.4	K	10		49.8	46.6		9.4		55.7	56.2	
8.7		57.2	49.0	M	9.5		59.9	43.8	M	9.9	21	23.2	56.9		9.1		54.8	48.7		8.8	57	7.4	19.6	K
9.8		58.4	34.2		9.5	7	5.2	48.2		8.0		45.2	54.9	L	9.0		55.6	48.0	K	8.8	58	27.2	1.4	K
8.5	53	31.6	40.2	L	9.5		8.0	22.8		9.0		45.8	30.0	K	9.2	43	23.4	48.7		9.5		47.0	17.0	
9.8		32.7	9.0		9.9		8.8	53.1		9.8	22	0.2	44.9		9.0		27.9	23.8		9.2	59	40.0	4.5	
8.7		57.6	14.2	K	9.7		30.9	18.8		9.3		0.2	56.3		9.4		28.6	18.8		10		42.2	31.1	
9.5		59.7	7.5		9.1	8	8.4	22.9	M	9.9		33.0	40.2		9.7		38.8	9.8		9.3		45.1	46.9	M
9.9	54	11.3	45.3		9.5		15.2	7.1		9.8		33.5	13.6		8.5		39.3	56.7	K	9.2		57.4	16.8	
9.5		49.2	32.3		9.6		18.5	35.0		9.7		44.2	13.7		10	44	2.7	28.4		9.2	0	30.1	15.7	M
9.0		49.5	45.0	K	9.0		27.2	8.1		9.8		58.8	12.1		8.9		5.9	18.9	K	9.4		41.9	10.1	
9.8	55	13.7	6.2		9.5	9	8.5	21.1		9.5		59.4	59.4		8.5		31.8	21.6	K	9.2		49.3	19.7	
8.8		14.8	45.5	K	9.1		32.4	7.5	M	9.7	23	8.2	49.4		9.5		48.4	14.2		9.6	1	12.8	34.0	
10		44.4	29.8		9.5		44.8	3.9	M	9.4		8.6	19.7		10	45	7.8	30.7		10	2	5.9	50.6	
9.6	56	10.3	36.4		10		52.4	28.6		9.0		25.3	39.2		9.1		40.6	9.2	K	9.2		33.5	19.7	M
7.3		16.7	2.9	K	10	10	3.7	3.1		9.5	24	25.4	10.2		9.5		58.5	7.7	M	8.9	3	28.9	32.8	
10		38.8	48.4		9.4		15.3	2.4		8.2		50.0	6.9	K	9.3	46	9.0	4.2		8.8		49.9	57.3	K
9.0		44.6	5.3		9.1		24.9	13.3		9.7	25	25.7	53.0		9.6		19.8	17.8		9.2		56.8	18.1	M
9.1	57	23.1	5.1	Sj	9.7		26.3	26.6		9.5		50.9	16.8		9.8		52.2	44.8		9.1	4	1.6	48.2	
9.5		25.4	33.1		9.3		28.4	6.0		9.6	26	42.4	7.9		9.2	47	0.3	59.5		9.2		3.8	20.1	
9.1		33.1	14.3	K	9.4		35.2	21.7		9.7		59.8	39.8		9.4		1.1	10.9		9.7		29.9	10.2	
9.2	58	1.4	28.5	K	10		38.6	17.0		9.7	27	2.5	17.2		9.4		31.0	5.2		9.8		43.1	56.5	
9.4		25.1	52.4		9.5		49.4	53.1		9.8		42.4	14.6		9.3		38.7	39.2		10		48.0	4.1	
10		46.9	11.4		8.5	11	22.4	56.3	K.	9.5	28	28.9	21.3		8.2		42.8	41.2	K	9.8	5	9.3	19.2	
9.7		52.6	36.1		9.2		34.4	35.1	M	9.2	29	39.8	21.7		9.8		49.4	56.1		8.3		14.8	16.7	Sj
8.9		52.6	24.4	K	9.5		47.4	35.4		9.5	30	13.5	22.9		9.8		58.9	8.0		9.5		20.4	11.6	
9.5	59	14.1	53.6		10	12	21.0	59.9		7.8		18.4	6.4	Sj	9.5	48	8.0	29.4		9.1		22.6	47.0	K
9.1		14.8	6.2		10	13	18.4	52.0		9.9		25.3	19.4		8.6		57.3	18.0	Sj	9.9		24.6	48.3	
8.2		46.7	37.7	K	10		27.0	50.4		9.7	31	7.9	54.4		9.3	49	4.0	30.8		9.5		31.3	39.0	
10	0	3.7	48.0		7.0		47.9	42.0	Sj	7.0		12.5	55.6	K	9.6		13.7	40.0		9.5		31.9	36.1	
9.0		28.7	43.3	M	9.1		55.8	8.6		9.3		45.5	42.4		9.8		29.8	6.3		9.4	6	56.5	3.3	
10		32.0	53.8		9.9		58.7	57.5		8.5	32	0.2	19.4	K	9.3		32.7	42.4		9.4	7	17.5	31.2	M
9.5		34.1	57.4		9.0	14	18.8	7.3		9.6		5.1	59.4		9.6		35.8	15.0		9.4		19.1	55.2	
9.5		41.6	58.8		9.0		35.3	14.0	K	8.1	33	55.3	11.0	K	10		59.9	45.2		9.4		40.2	16.6	
9.8		48.7	9.1		9.7		46.8	1.4		9.1		58.0	41.5		8.9	50	26.3	51.2		9.5		41.3	32.0	

4101—4160					4161—4220					4221—4280					4281—4340					4341—4400				
	15h		−9°			15h		−9°			15h		−9°			15h—16h		−9°			16h		−9°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.8	7	48.3	17.2		10	24	10.8	42.7		9.8	37	37.1	53.6		9.5	52	50.7	15.4		9.2	8	49.6	41.3	
9.1		54.7	23.8		9.0		18.8	51.1	K	10		37.2	9.7		9.4	53	29.1	22.1		9.6	9	12.6	7.2	
9.8	8	27.0	44.4		7.0		24.9	56.5	K	9.5		43.4	56.8		9.3		44.4	30.4		9.3		18.2	24.4	
8.6		40.1	42.4	Sj	8.0		26.7	5.1	K	8.3		55.4	14.7	K	10		46.6	40.2		9.8		23.7	36.6	
8.7		43.0	52.9	K	9.1		28.0	35.5	B	9.5		57.7	37.0		9.3	54	3.6	42.1		8.5		46.1	45.8	K
9.3		49.0	41.2		10		34.8	53.5		9.4	38	17.4	10.4		9.8	55	5.9	38.5		9.8	10	1.5	54.5	
9.2		55.1	24.6		8.5	25	16.3	36.8	K	8.9		25.7	30.3	K	9.5		6.2	0.8		9.0		1.6	7.9	K
9.0		55.3	58.0	K	9.1		32.7	24.4		8.0		42.6	40.5	K	9.8		16.4	48.5		9.6		42.0	16.5	
9.0	9	2.5	3.9		9.5		41.9	25.6		9.8	39	17.0	51.5		9.5		24.3	23.1		9.9		43.7	5.6	
9.5		10.3	44.0		9.8	26	10.2	58.3		8.0		27.6	50.8	L	9.8		54.8	44.1		9.1	11	1.8	29.1	
9.8		36.2	18.3		4.7		14.9	33.7	L	9.2		33.1	14.6		7.0	56	15.5	30.8	B	9.3		19.0	51.4	
7.7		41.2	57.9	K	9.8		47.2	4.1		9.1		41.0	38.3		9.3		15.9	32.6		9.3		24.6	46.2	
9.5	10	4.5	26.9		8.7	27	8.0	18.5	Sj	7.0		47.3	1.5	Sj	9.7		32.1	38.1		8.3		35.0	16.1	Sj
9.5		21.5	36.0		9.4		28.3	52.5	M	9.5	40	4.6	14.3		9.5		45.7	54.6		9.1		44.7	1.8	
9.6		34.0	3.8		10		52.1	7.8		9.8		23.8	4.8		10	57	22.6	48.8		8.0	12	5.2	29.9	K
8.5		42.3	15.0	M	10		55.2	4.7		9.8		47.3	18.6		9.1		35.1	46.1		9.4		18.4	6.6	
10		47.8	29.7		9.7	28	4.7	4.5		8.8	41	9.5	34.2	B	9.1	58	3.5	46.2		9.8		30.2	32.4	
8.7		49.5	43.1	Sj	9.5		14.3	34.9		9.6		14.1	47.6		8.5		16.8	42.5	M	9.6	13	7.6	38.3	
9.4		53.5	41.8		9.9	29	0.3	35.4		9.8		15.0	43.7		9.5		18.0	10.2		9.7		14.1	40.7	
9.4	11	10.0	4.5		9.0		7.3	59.0	K	9.5		21.0	44.5		8.3		41.1	36.7	M	9.8		15.7	33.6	
9.4		34.0	31.1		10		13.8	52.3		10		47.8	17.1		9.0		53.7	6.9	M	9.6		37.0	17.7	
9.7		48.2	22.9		9.1		47.7	46.5		9.3	42	4.6	21.1		9.0	59	18.0	55.9		8.8		46.8	45.6	K
9.4		53.7	24.3		10		51.1	10.4		9.0		20.6	39.7	K	9.5		18.4	13.9		9.4		47.3	25.1	
9.4	12	15.6	14.1		9.6		51.2	57.2		9.4		38.0	25.0		9.0		56.3	23.0	Sj	8.5		48.5	50.3	K
9.5		33.0	36.5		9.0	30	25.1	5.6	K	9.9		55.7	1.5		6.5	0	31.9	42.5	B	9.0	14	4.4	55.9	K
9.1		43.8	11.5	K	9.8		31.6	6.7		9.1	43	16.2	28.1		9.1		59.3	5.5	K	9.6		9.7	32.3	
9.4		53.9	58.5		9.1		46.9	19.1		9.2		54.1	43.1		7.3	1	9.4	15.2	K	8.5		35.1	7.6	Sj
9.5	13	17.2	19.6		9.5	31	15.3	39.9		9.2	44	3.9	27.1		9.5		14.0	5.9		9.9		38.1	21.6	
9.5	14	3.6	6.8	M	9.1		23.7	50.4		8.6		5.5	1.5	M	9.6		15.7	59.2		10	15	0.2	0.1	
9.6		34.2	49.0		9.5		26.0	11.5		9.0		10.1	43.6		9.8		24.7	59.3		10		5.6	9.5	
9.0		48.8	26.5		9.4		28.7	47.9		9.4		19.7	9.2		9.8		35.7	58.7		9.4		10.5	14.8	
9.6		49.8	11.4		8.5		41.6	6.4	Sj	9.1		32.5	56.9		9.6		57.3	18.4		9.5		30.5	16.1	
8.5	15	18.9	57.8	K	9.5		51.7	49.3		9.4		59.5	23.1		9.2		59.7	31.7		9.4		31.8	20.3	
9.5		41.2	11.6		8.5		52.8	8.3	K	8.8	45	14.0	21.5	K	9.5	2	3.2	4.6		9.6		55.6	8.0	
9.1		48.6	18.9	M	9.5		55.2	40.1		10	46	2.8	7.7		8.9		13.7	48.1	K	9.5	16	0.2	38.6	
9.1		50.9	56.7	M	9.8	32	0.3	32.5		9.6		19.2	37.5		10		33.1	58.0		9.6		1.4	40.6	
9.7		58.3	1.5		9.4		1.7	51.5		9.5	47	41.5	9.3		9.8		37.4	8.5		8.2		3.7	0.7	K
5.0	16	19.9	47.8	K	9.8		18.1	1.0		9.8	48	7.0	52.1		9.3		46.2	52.9		9.6		14.5	13.4	
9.0		35.8	7.2		10		50.1	42.4		9.5		7.2	3.1		9.4		49.5	6.0	Sj	8.7		41.5	29.3	K
9.3		54.1	23.4	M	9.4	33	12.6	2.3		8.5		19.5	17.7	K	9.5	3	2.0	43.3		9.3	17	17.7	36.4	
9.2	17	12.4	48.9	K	9.4		19.8	34.9		9.7		46.5	12.0		9.7		32.9	33.0		8.2		19.2	31.4	K
9.4		59.7	12.7		9.5		24.2	38.6		9.0		48.0	38.4		9.8		47.7	9.5		9.8		28.1	41.3	
9.5	18	25.4	44.3		9.3		39.2	40.0		9.4		52.5	32.4		9.3	4	1.5	57.3		9.9		28.2	0.3	
9.1		40.4	27.8	M	9.3		40.1	43.3		9.2	49	16.4	38.0		5.3		4.4	40.9	Sj	9.9		32.5	12.4	
9.8	19	12.3	37.2		10	34	3.7	48.0		9.0		35.0	7.6		10		51.7	6.4		8.0		42.1	44.8	Sj
9.4		28.4	40.1		9.5		15.4	54.9		9.2		39.3	11.0		9.0		55.6	45.7	K	10		58.7	39.6	
9.1		52.0	28.7	M	10		19.6	52.2		9.8	50	2.5	50.7		9.8	5	0.6	50.6		8.6	18	23.9	23.3	K
9.8	20	17.9	40.4		9.8		27.5	6.6		10		10.2	25.0		9.8		9.6	42.0		9.5		29.9	47.3	
10		36.3	37.1		9.5		33.3	17.2		9.3		44.9	22.0		9.2		16.8	57.6	K	8.6		43.6	24.0	K
9.7	21	5.0	6.2	M	9.2		51.1	51.4	M	9.3		50.3	33.8		9.5	6	0.1	15.8		9.5	19	7.7	41.3	
9.8		42.8	41.5		9.0	35	15.9	22.7	K	9.8	51	2.6	33.9		9.0		17.6	52.6		9.4		19.4	47.7	
9.4	22	0.3	3.5		9.5		27.0	7.3		9.1		2.7	42.4		9.3		24.2	41.2		8.2		35.1	48.3	K
9.0		6.0	33.1	K	7.8		40.7	39.5	K	9.8		22.6	25.0		8.9		52.0	22.1	Sj	9.5		36.5	28.9	
9.8		21.1	18.9		9.2		44.3	25.0		9.3		28.3	16.2		9.9	7	0.6	49.4		9.7		38.6	40.1	
9.1		29.8	3.0	K	9.3	36	6.0	14.2		9.6		28.7	35.5		9.4		3.1	54.6		9.4	20	42.1	0.2	
9.3		31.9	44.8		8.8		24.5	26.1	Sj	9.5		47.0	50.0		10		31.3	1.6		9.6		59.1	55.6	
9.1		34.4	49.7	K	10		45.7	41.2		9.2		47.1	15.4		9.3		34.9	30.8		10	21	12.6	48.5	
9.3		42.0	32.8		9.8	37	6.8	24.6		9.1		52.8	32.5	B	9.6	8	24.7	23.5		9.5		14.2	28.8	
9.0		57.4	48.6	K	9.7		19.4	18.1		9.9	52	1.5	16.9		8.0		40.3	49.4	K	9.4		23.8	26.7	
9.6	23	9.4	33.5		9.8		28.1	12.4		10		35.4	45.0		9.8		46.3	25.1		9.8		46.4	11.4	

4401—4460

m	16h m	s	−9° ′	
9.5	22	18.8	36.1	
9.9		22.9	16.5	
8.9		56.6	47.2	
9.7	23	18.0	10.6	
8.7		49.4	34.5	Sj
7.0	24	5.6	22.4	K
9.5		5.9	12.8	
9.2		11.6	43.4	M
9.2		33.5	46.4	
9.3	25	13.0	54.9	
9.3		15.6	38.1	
9.7		44.1	28.5	
7.8	27	24.9	22.3	Sj
9.3		31.7	27.5	
9.5		41.0	37.9	
9.4	28	0.6	38.9	
8.2		17.0	26.8	K
9.3		29.5	44.8	
9.8		33.9	17.4	
9.7	29	15.4	10.9	
9.7		16.5	7.0	
9.5		41.8	55.1	
9.3		42.1	30.7	
9.0	30	20.0	54.2	
9.5		29.4	15.0	
9.3	31	1.2	25.4	
7.3		1.9	58.4	K
9.8		11.5	52.2	
9.8		15.6	38.1	
7.0		42.8	15.3	K
9.1	32	22.4	9.4	K
9.5		36.1	38.2	
9.6		54.1	2.8	
9.7	33	9.4	42.8	
10		30.5	56.6	
9.5	34	47.0	3.2	
10	35	3.3	34.4	
9.7		3.4	39.2	
9.1		21.0	36.4	
9.1	36	20.1	30.1	
9.5		20.4	5.0	
9.3		27.8	26.4	
9.3		43.9	1.5	
9.0	37	9.4	16.5	
9.5		18.7	46.6	
9.1	38	19.8	25.8	
9.5		46.4	43.3	
9.4		48.1	8.1	
9.8		56.5	56.2	
9.5	39	25.0	32.3	
8.8	40	9.4	25.0	
9.9		23.0	7.9	
9.5		38.2	27.7	
8.0	41	0.9	39.7	Sj
9.3		54.1	51.4	
9.5	42	7.8	27.1	
9.5		54.4	3.7	
9.5	43	0.9	52.0	
9.8		25.6	25.6	
9.1		27.5	42.1	

4461—4520

m	16h—17h m	s	−9° ′	
9.6	43	47.5	19.8	
10		54.6	50.5	
9.5	44	0.3	20.0	
9.8		29.9	2.1	
9.8		57.9	4.2	
9.8	46	19.1	46.0	
9.0	47	11.6	9.8	
9.8		18.6	14.9	
9.5		51.0	58.0	
9.5	48	46.2	2.0	
9.4	50	7.8	11.6	
8.3		36.3	29.9	K
9.8	52	22.9	58.7	
9.5		23.0	13.2	
9.3		57.1	36.6	
9.0	53	9.6	0.8	
9.5		23.0	18.9	
8.6		29.7	31.6	K
8.8		48.1	33.1	K
10		54.0	17.1	
8.8	54	35.6	4.1	K
8.5	55	21.1	3.6	K
10		33.5	7.6	
9.6		53.5	20.7	
9.8		59.2	45.6	
9.5	56	17.0	9.6	
9.8		40.0	41.9	
9.3		48.0	55.3	
9.5		58.5	17.5	
8.9	57	22.8	25.8	
9.4		32.1	41.5	
9.0		33.3	4.4	
9.2		36.1	25.6	
9.7	58	5.0	33.8	
9.1		6.1	1.3	K
9.6		7.4	3.9	
10		8.7	0.2	
10		14.4	26.6	
9.3		20.0	29.4	
9.4		44.8	42.5	
8.7		48.8	34.1	K
8.1	59	6.6	35.7	Sj
9.1	0	2.0	44.9	
9.8		29.5	14.2	
9.8	1	31.3	22.0	
9.7		33.4	32.5	
9.4		48.3	43.5	
9.5	2	38.9	28.8	
9.5		56.5	48.7	
9.0	3	16.4	55.4	
9.4		18.7	24.0	
8.2		32.5	44.8	K
9.5		35.4	2.9	
9.4		44.7	26.0	
9.4		48.8	24.5	
9.5	5	19.6	7.2	
9.4		20.3	29.5	
8.6		22.5	29.8	K
7.3		41.2	6.4	Sj
9.5	6	3.7	5.2	

4521—4580

m	17h m	s	−9° ′	
9.5	6	51.7	2.8	
9.2		59.1	8.9	M
9.2	7	11.9	42.7	
9.1		35.0	10.9	
7.0		43.1	38.4	K
9.8	8	21.5	40.6	
9.0		43.6	19.6	Sj
9.1		46.2	9.1	
9.9		47.5	19.6	
8.5	9	8.7	1.7	K
9.1		9.5	37.4	K
9.3		34.7	5.8	
9.6	10	19.3	36.1	
10		21.2	9.0	
9.3		47.1	16.7	
9.5	11	43.0	44.8	
9.6	13	10.6	53.3	
9.2		29.8	57.8	
8.9	14	1.5	50.9	M
8.8		18.3	34.4	K
9.2		42.1	17.0	
9.4		43.5	48.4	
9.5	15	8.0	28.0	
9.4		39.7	3.7	
9.4		57.3	4.4	
7.0	16	1.6	13.1	K
9.5		41.4	30.6	
9.2	17	3.1	23.0	
7.8		5.7	4.2	Sj
9.1		47.4	22.4	
9.5	18	31.1	6.8	
9.6		48.5	26.4	
9.3	19	12.4	49.1	
9.1		13.0	24.2	
9.1	20	11.2	23.9	
8.0		31.5	22.3	Sj
9.5	21	11.0	35.0	
7.5		17.1	51.9	K
9.7		30.1	43.8	
9.0		41.8	27.7	
9.3		52.6	59.6	
8.2	22	29.7	58.7	K
9.4		39.5	4.6	
8.9	23	45.4	52.2	Sj
9.0	24	6.0	5.6	
9.3		37.8	18.2	
9.2	25	10.5	30.7	M
9.5		50.6	4.0	
9.5		52.4	32.0	
9.8		59.5	55.6	
9.5	26	5.5	22.8	
9.6		24.5	16.2	
9.8		50.5	0.2	
10	27	10.0	59.4	
9.5		44.4	23.1	
9.4		58.0	13.4	
9.3	28	15.6	51.5	
8.9		23.0	41.9	K
8.8		44.2	7.8	
8.5		44.2	44.3	K

4581—4640

m	17h m	s	−9° ′	
8.9	29	13.5	25.3	K
9.8		26.5	24.5	
9.3		40.1	31.4	
9.8	30	46.2	10.3	
9.1	31	6.6	52.2	
9.7		11.0	50.1	
9.2		22.7	16.6	M
9.8	32	3.6	27.5	
9.5		14.5	59.6	
9.3	33	8.3	9.1	M
8.8		52.9	39.6	
9.0	34	29.2	0.2	M
9.5		40.4	39.1	
9.0	35	44.8	14.7	M
8.8	36	9.0	44.6	M
10		29.1	42.2	
10	37	8.1	37.6	
7.8		9.0	44.6	M
9.5	38	11.1	39.0	
9.5		56.5	57.8	
9.0		57.7	3.1	
9.4	39	7.2	30.4	
9.1		23.1	42.2	
9.0		49.5	32.6	
9.1	40	37.1	34.7	
9.0		42.6	34.8	M
9.4		54.6	28.6	M
9.4		59.8	4.8	
10	41	44.1	34.7	
9.8		53.7	34.4	
9.8		54.0	1.0	
9.7		56.3	12.4	
9.8	42	42.2	17.3	
9.3	43	8.4	53.6	
9.4		20.1	1.0	
8.4	44	1.0	56.1	Sj
9.5		10.6	35.4	
9.4		52.4	4.8	
9.4	46	10.5	46.1	
8.9	47	7.1	49.4	B
8.8	48	30.4	35.2	
9.8		59.5	3.2	
9.2	49	40.7	11.6	
9.0		55.7	18.1	K
9.0		59.0	46.4	
9.1	50	12.6	5.1	M
9.5		25.0	24.7	
9.5		30.9	31.6	
10		45.8	38.3	
10		50.2	32.9	
9.0		58.2	0.0	K
3.8	51	2.5	45.2	K
9.8		24.5	54.1	
9.8		34.3	30.0	
10	52	4.8	21.1	
9.7		19.3	7.8	
8.9		22.6	30.0	M
9.4		27.9	28.3	
9.0	53	48.9	2.5	
10	54	20.8	13.5	

4641—4700

m	17h—18h m	s	−9° ′	
9.5	55	44.4	47.0	
7.0		56.7	14.5	B
9.0	56	27.0	15.4	
8.9		27.4	58.5	
9.1	57	9.2	17.6	
8.2		13.1	35.0	B
9.4		13.1	12.4	
9.8		32.0	59.4	
8.0		47.7	16.0	B
9.7	59	1.9	39.0	
10		9.0	2.2	
7.3		36.7	11.6	B
9.5		42.5	25.3	
8.6	0	38.0	49.5	K
9.5		55.7	23.7	
9.1	1	9.4	27.5	
9.2		16.5	46.4	
9.4		51.4	31.7	
8.9		59.2	14.7	
9.0	2	5.0	42.5	K
9.5		10.6	29.2	
9.3		11.7	7.1	
9.6		38.6	33.5	
9.5		43.4	53.7	
9.6	3	10.9	45.4	
9.6		20.1	22.6	
9.5		33.3	18.0	
9.8		43.7	11.7	
8.2		49.3	34.3	K
9.2	4	48.8	3.2	
8.9	6	6.4	54.5	
8.8		26.3	34.1	K
8.8		35.1	21.8	
9.8		45.9	56.5	
9.0	7	44.9	59.5	
8.0	8	16.0	51.0	K
9.5		31.4	59.5	
6.2	9	24.8	48.2	K
9.8		29.7	51.3	
8.4		41.7	25.1	
9.0		46.1	46.5	K
9.2		56.9	54.2	
8.9		59.1	41.8	K
8.8	10	7.3	23.3	
8.7		7.6	46.1	K
9.5		37.4	6.1	
9.1		49.2	32.3	M
9.3		54.0	18.8	
9.5	11	20.0	8.5	
8.4		29.5	51.9	K
9.0		37.6	33.9	M
7.0	12	7.3	38.6	Sj
9.3		18.8	9.2	
9.6		27.0	42.7	
9.5		43.6	34.9	
9.8	13	1.5	14.2	
9.4		8.5	12.5	
8.6		37.8	15.6	K
9.2		52.5	14.2	
9.4	14	11.7	9.1	

4701—4760				4761—4820				4821—4880				4881—4940				4941—5000			
	18h		−9°		18h		−9°		18h		−9°		18h		−9°		18h		−9°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.7	14	37.0	49.7	9.0	23	59.6	8.8	K	9.7	37	18.8	33.6		9.8	45	39.2	33.6		9.2	51	47.7	37.4	K
9.4		39.5	42.5	7.7	24	14.4	28.2	K	10		21.8	27.9		10		44.6	46.5		9.4		49.8	22.7	
9.5		44.8	18.3	9.6	25	6.2	3.9		9.8		25.0	31.6		9.3		47.3	13.8		8.8	52	4.3	1.0	M
9.1		52.6	35.0	9.5		15.2	22.6		9.5		36.5	56.8		9.5		52.9	6.1		9.4		6.9	22.0	
9.6	15	0.8	30.1	9.3		36.3	3.0		9.8		51.3	23.1		9.5		53.6	10.8		9.5		39.5	57.9	M
9.5		6.5	51.9	9.9		56.3	17.3		9.5		51.3	13.5		7.5		59.7	32.8	M	9.5		46.4	10.2	
9.6		17.5	49.7	9.0	26	23.5	46.7	M	9.5		57.1	5.9		9.3	46	3.6	46.6		9.6		51.0	43.8	M
9.8		20.3	28.1	8.6	27	16.3	30.7	K	9.0	38	4.2	37.0	M	9.0		7.7	41.2	M	9.4		55.0	43.4	
8.5		29.5	16.2	M	9.7		23.0	5.8		9.5		19.5	55.3		9.5		18.8	6.4		9.8		57.4	18.5	
9.5		35.1	37.9	8.8		25.7	9.9		9.3		28.9	20.4		9.2		25.1	39.1		10	53	1.9	49.0	
9.3		35.7	13.5	8.5		34.7	35.9	K	9.1		35.8	1.6		9.5		32.6	47.7		9.5		4.1	50.8	
5.5		43.2	0.4	K	9.3		43.1	41.7	9.1		48.5	53.8		9.2		37.7	41.6		9.4		11.9	39.0	
8.5		53.4	58.2	9.5	28	0.7	35.4		9.3	39	3.7	48.4		9.4		39.4	6.9		9.1		15.6	54.9	
9.3		53.6	28.5	9.5		11.5	52.1		9.3		6.1	47.4		9.2		41.0	55.0		9.3		24.6	44.4	M
10	16	20.1	26.8	9.9		33.0	48.0		8.9		27.5	27.9	M	9.1		45.9	37.8	M	9.7		52.4	14.1	
9.5		34.1	37.9	9.5		56.7	16.0		9.5		34.8	7.3		8.8		51.1	10.4	K	10		59.7	28.5	
9.2		36.5	58.4	9.3	29	19.6	30.3		9.5		59.5	55.8		9.8		51.8	24.3		9.2	54	3.3	30.4	
9.5		40.4	59.3	9.4		57.5	56.8		9.0	40	8.4	10.1	K	9.5		52.7	31.5		9.5		13.6	42.5	
8.9		45.9	25.4	8.5	30	1.2	4.6	Sj	9.2		11.4	16.0	M	9.8	47	2.0	34.9		10		24.9	22.9	
10		52.6	52.5	9.4		1.6	40.2		9.1		57.3	11.1	K	9.0		2.3	10.9	K	9.2		28.1	3.0	
9.3	17	4.6	40.3	9.5		26.7	5.1		9.0	41	1.6	8.7	K	9.2		12.0	3.1		8.7		38.7	2.1	M
9.1		16.5	44.9	9.4		41.9	0.4		9.5		14.6	33.0		9.8		15.6	53.9		9.1		39.2	1.0	
9.5		19.2	22.4	9.3		55.9	14.6		9.5		17.7	26.0		9.7		21.9	3.1		8.2		40.1	8.2	M
9.4		22.9	23.2	9.1	31	53.4	13.1		9.9		25.1	37.2		9.7		34.6	49.4		9.6		42.9	17.6	
9.8		23.1	41.3	9.8		58.8	35.2		9.2		26.5	51.1		10		42.2	1.4		9.1		43.6	51.5	
9.5		27.5	46.9	9.8	32	13.9	34.0		9.5		40.6	47.7		8.4		44.0	27.4	M	9.5		45.4	17.7	
9.7		35.1	31.5	9.8		14.4	45.6		9.0		41.3	11.4	K	9.5		45.1	23.5		9.4		53.5	28.9	
9.1		36.1	35.7	9.6		14.7	27.8		9.3		48.0	31.9		9.4		48.2	41.7	M	9.1		56.1	10.8	M
8.3		44.5	49.7	K	9.4		16.4	24.8	9.0	42	9.3	1.2	K	9.2	48	8.7	34.8	K	9.4	55	27.9	9.9	
9.6		51.7	5.0		8.3		24.9	16.2	Sj	9.0		11.8	4.8	K	9.5		14.6	29.5		9.5		30.5	56.3	
8.5	18	2.9	32.4	M	8.8	33	19.8	34.1		9.8		23.3	41.0		9.0		28.4	8.7	Sj	8.9		32.6	46.9	M
9.5		12.6	25.8		9.7		25.2	12.7		9.0		38.5	47.4	M	9.3		36.3	11.8		9.5		39.3	0.3	
9.5		20.2	34.8		9.2	34	5.4	15.8	M	9.8		39.4	1.1		9.6		37.5	56.3		9.4		43.1	48.5	
9.8		22.8	22.8		9.8		12.2	23.0		9.0		43.3	2.5	K	9.3		47.7	20.1		9.3	56	14.9	17.1	
9.5		36.0	50.0		9.0		19.4	16.0	K	9.4		44.1	16.1		9.5		55.1	54.4		9.3		22.8	5.9	
7.5		37.3	16.4	Sj	5.0		20.1	11.2	K	10		54.1	7.3		9.3	49	7.2	7.5		9.8		28.2	14.3	
9.8	19	4.6	35.5		10		23.2	11.7		9.5		56.6	26.2		9.0		10.8	3.5	K	8.7		29.1	44.8	M
9.5		6.9	56.5		8.7		25.2	37.4	M	9.0		59.0	59.5		9.7		14.9	0.7		8.8		31.9	12.2	
9.0		55.2	6.5		9.4		27.6	0.9		6.3	43	0.0	56.1	L	9.5		36.1	47.1		9.0		45.7	1.2	
9.6	20	6.8	18.1		9.0		44.0	34.6		9.8		0.4	5.2		8.5		43.0	57.9	M	9.4		52.3	57.6	
9.5		10.5	43.7		9.8		57.2	6.8		9.3		22.0	25.6	K	9.2		45.4	36.0		9.5		55.9	8.1	
9.3		22.1	40.5		8.3	35	7.3	18.7	Sj	8.8		23.0	12.1	K	9.4		46.3	11.2		9.0	57	19.4	3.0	M
9.3		26.6	27.4		9.8		29.3	4.5		8.7		41.5	54.7	M	9.2		59.6	8.5	Sj	9.8		36.4	23.3	
9.9		48.3	10.1		9.0		31.4	10.8	M	9.2		53.0	27.4	M	9.8	50	1.8	6.1		9.5		43.9	22.9	
8.6		51.5	43.4	K	8.8		33.0	27.8	K	10	44	0.6	53.6		9.8		13.6	46.0		9.8		47.1	54.8	
9.5	21	25.9	25.7		9.5		42.1	37.5		9.1		3.3	26.3	K	9.1		18.5	56.3	M	8.0		59.1	6.9	Sj
9.5		31.2	1.1		9.5		45.1	34.5		9.4		9.1	14.0	M	8.9		20.8	30.0	Sj	6.6	58	12.7	50.7	K
9.5		36.0	17.4		9.5		45.1	50.0		8.0		10.8	15.3	K	9.5		28.1	44.5		9.1		16.0	49.6	
8.0		37.3	23.0	K	9.0		50.0	44.9	K	9.4		23.2	48.9		8.9		44.0	18.9	K	10		21.2	49.1	
9.8		56.2	27.2		9.8		56.0	59.1		9.8		30.9	22.1		9.8		44.1	8.8		9.5		21.3	31.2	
9.5	22	13.1	36.1		8.3		56.1	4.3	M	9.0		38.3	6.3	M	10		52.4	43.1		9.8		25.9	5.1	
9.7		32.8	18.5		9.6	36	3.9	28.0		9.5		57.6	39.4		9.8		53.6	9.3		10		27.8	47.6	
9.6		52.9	23.6		9.8		23.0	57.6		10		57.9	51.1		9.3	51	2.7	46.9		9.7		28.8	54.3	
9.1		58.8	7.9		9.5		29.4	24.8		9.3	45	1.0	26.7		9.5		3.7	42.9		10		42.8	34.6	
9.8	23	12.1	59.2		9.0		34.6	27.0	M	9.4		1.5	4.7	M	7.5		11.3	9.5	Sj	9.5		43.5	8.7	
8.8		30.2	35.2	K	9.4		36.5	57.1		6.6		4.4	45.2	K	9.1		11.7	45.3	M	9.4		44.9	3.1	M
9.8		30.2	3.0		9.5		39.6	40.1		9.5		17.1	11.6		9.2		15.7	44.0		9.4		53.3	4.2	
9.5		33.3	32.0		9.8		49.0	50.0		9.5		19.2	13.7		9.4		35.1	55.2		10		54.0	22.1	
9.5		48.3	21.0		8.8	37	14.3	32.8	M	9.9		22.5	59.1		9.2		43.2	30.0	K	9.7	59	19.1	26.7	
9.5		50.2	32.0		9.7		17.4	31.8		9.5		26.7	34.9		9.3		43.4	48.4		8.5		22.4	37.8	K

4819: Hauptstern des Cumulus GC 4432

5001—5060				5061—5120				5121—5180				5181—5240				5241—5300			
18h—19h		—9°		19h		—9°		19h		—9°		19h		—9°		19h		—9°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.1	59	22.4	40.3	K	9.6	7	48.7	14.9	9.7	16	10.3	42.0	9.7	28	6.2	33.5	9.1	38	18.5	5.7	
9.0		23.0	12.3		9.0		51.0	45.0	9.5		13.7	24.1	9.6		9.9	6.4	9.4		41.5	2.3	
10		23.2	24.7		9.6		51.3	40.8	7.8		27.0	36.8	K	8.5		10.4	23.9	M	9.5	39	0.8	30.8	
9.3		30.0	24.5		9.8	8	5.4	16.4	9.2		53.0	36.1	8.5		27.5	38.5	M	8.8		27.5	3.0	Sj
9.1		48.9	15.2		9.5		16.4	22.1	8.7		59.9	43.9	K	9.5		44.1	25.1		10		57.9	15.3	
9.5		53.4	51.0		9.6		17.9	26.5	9.6	17	36.2	55.0	9.8		55.8	57.7		9.2	40	6.4	18.4	
10		55.5	13.0		9.3		26.8	40.7	9.7		36.5	43.9	M	9.5		55.8	22.0		9.4		33.7	42.9	
9.4	0.	1.5	24.7		9.3		29.8	40.7	9.5		49.0	40.4	M	9.5	29	8.3	39.8		9.2		36.7	36.0	
9.0		16.9	7.6	Sj	10		31.7	18.1	9.0		54.9	50.3	Sj	9.5		55.1	30.6		9.4		37.2	26.7	
9.6		30.0	13.2		9.5		32.4	0.4	8.1	18	2.0	17.5	Sj	9.1	30	4.8	33.0	Sj	9.5		41.9	34.3	
9.8		43.0	5.8		10		37.2	37.1	9.5		15.8	0.5	9.6		13.6	49.2	9.8		53.4	29.7	
9.5		45.1	46.6		8.9		50.8	40.8	M	9.4		46.8	25.0	M	9.1		23.0	27.5	M	9.8		55.4	11.3	
8.4		48.0	31.9	K	9.2	9	18.7	51.8	9.9	19	19.5	41.3	9.8		25.9	23.3	8.0	41	20.5	17.0	K
9.2		54.2	45.6		9.0		21.5	39.5	M	9.7		22.9	59.0	9.8		28.5	12.9		9.7		30.2	43.3	
8.0	1	1.9	2.5	K	9.3		31.8	59.7	9.4		37.5	53.4	9.1	31	2.6	49.8	K	9.5		50.9	34.6	
9.3		11.7	3.4		9.8		43.0	30.1	9.5		42.8	4.4	9.1		11.9	10.2	M	9.5		52.0	31.4	
9.7		12.3	16.5		9.4		47.3	7.6	9.7		45.3	18.0	9.5		32.9	31.5		9.5		58.0	3.5	
9.5		26.2	40.1		10	10	0.2	19.9	9.5		51.2	18.0	9.5		34.4	7.9		9.5	42	6.0	4.0	
9.8		31.0	21.2		7.8		2.9	56.3	K	9.0		58.3	23.4	M	9.7	32	5.3	53.7		9.5		16.4	40.8	
8.6		42.0	32.5	Sj	9.5		4.8	24.1	9.7		59.9	30.1	9.8		7.3	30.8		9.1		35.8	56.8	
9.4	2	9.5	15.4		10		8.2	45.9	8.3	20	6.6	42.9	K	9.7		23.9	26.0		9.4		40.4	19.5	
7.5		10.3	23.3	Sj	9.1		9.5	10.9	9.5		16.9	16.1	M	9.5		52.8	3.2		10		42.5	19.4	
9.8		25.2	43.8		9.7		10.4	50.2	8.0		17.5	49.8	K	8.4		54.3	27.2	Sj	9.0	43	6.9	22.4	
9.2		34.1	21.4		9.3		13.6	52.5	9.7		18.8	5.6	8.9	33	10.6	45.0	Sj	8.9		7.8	12.7	M
9.5		39.6	20.5		9.3	11	2.5	15.7	9.9		30.0	15.8	9.8		42.2	0.6		9.6		12.1	3.4	
9.5		45.2	41.7	B	9.4		5.2	25.9	8.4		39.6	29.9	Sj	9.6		50.1	53.1		9.8		17.2	22.1	
9.0	3	25.5	21.0		9.3		11.5	21.7	9.5		45.2	19.1	9.8	34	0.9	14.2		8.1		24.8	53.4	K
9.4		32.2	41.8		8.5		22.5	12.3	K	9.3		46.3	4.6	9.9		6.2	18.0		9.5		41.5	9.3	
9.9		38.2	41.4		9.2		40.7	1.5	9.7		49.5	4.0	6.6		7.9	31.5	Sj	9.6	44	2.9	16.5	
9.1		41.3	47.2		9.1		49.3	16.0	M	9.5		52.6	31.9	9.3		15.3	25.2		9.4		19.0	23.0	M
9.6		43.0	9.4		8.5		55.3	42.7	Sj	9.6		57.2	29.0	9.3		19.8	42.7		10		21.7	36.5	
9.5	4	12.6	16.2		8.3	12	4.0	34.6	M	9.9	22	3.0	48.5	9.5		20.4	55.1		8.7		24.3	55.7	K
9.0		24.5	10.1		8.5		5.2	8.0	K	9.8		13.8	11.8	8.6		24.6	40.1	K	9.5		26.3	22.1	
9.0		25.5	30.2		7.5		6.3	39.8	M	9.7		21.7	30.4	9.6		35.6	10.5		9.7		35.5	31.9	
9.7		39.2	32.5		9.0		7.8	44.7	9.4		38.5	32.7	9.7		46.5	9.9		9.5		45.0	17.8	M
8.5		44.5	10.9		9.8		31.5	19.9	9.9		45.1	27.8	8.7		49.2	33.1	K	9.1	45	14.9	44.1	
9.3		50.7	54.3		9.5		36.8	49.5	9.6		47.9	54.2	10	35	10.4	35.4		9.7		33.5	22.6	
9.5	5	2.7	24.9		9.5		48.0	5.7	9.8		49.4	5.2	9.5		12.2	18.9		8.8		39.3	7.4	WZ
9.8		11.7	47.3		9.0		52.9	53.7	M	9.5		55.3	33.0	8.7		40.2	24.6	Sj	9.2		40.1	21.2	
9.7		12.7	35.0		9.5	13	11.6	56.2	9.1		58.7	28.3	Sj	9.5		42.0	18.6		9.8		43.0	35.3	
8.8		15.2	55.7	Sj	9.5		22.4	41.2	9.8	23	0.6	4.9	9.4		42.3	25.3	9.3	46	1.8	20.8	
9.6		17.2	45.5		9.5		42.5	5.4	9.7		20.4	10.0	9.7		51.4	21.1	9.6		37.6	35.7	
9.4		19.9	55.5		9.4		44.9	51.9	9.7		30.2	19.4	9.0		57.8	44.6	L	9.2		51.5	17.5	
9.4		24.0	25.1		9.8	14	6.5	26.2	9.1		30.7	8.6	9.8	36	9.7	14.5		9.5		52.0	29.5	
9.3		33.5	4.4		9.8		24.3	18.1	9.4		56.2	35.7	Sj	9.5		12.0	2.2	M	9.8	47	13.6	12.2	
9.3		47.3	33.4		9.9		37.7	10.8	9.3	24	0.5	34.6	9.6		17.7	53.5		9.9		31.3	49.0	
9.0	6	13.0	4.5	M	8.9		38.0	40.0	Sj	9.0		7.4	47.2	L	9.8		32.7	58.7		9.9		31.9	58.3	
9.0		21.8	18.4		8.6		43.8	1.5	Sj	8.8		16.3	15.9	K	9.7		40.0	28.5		9.1		45.6	7.4	K
9.4		21.9	32.4		10		59.7	22.4		9.0		36.8	18.6	K	9.2	37	0.9	28.4		8.7		46.8	7.6	K
9.4		22.9	30.6		9.1	15	1.0	26.5	WZ	9.5		37.0	54.3		8.8		15.4	44.7	K	9.7		55.0	30.2	
9.1		38.9	10.1		9.4		3.0	31.7		9.7	25	23.9	28.4		10		17.8	51.2		8.9		58.0	39.3	
9.0		41.5	2.6		9.3		3.5	15.6		9.4		35.1	14.8	M	9.1		23.0	9.8		9.8	48	4.0	13.1	
10		51.8	2.7		9.3		12.3	35.6		9.5		45.0	2.1		9.5		34.7	58.0		9.4		5.2	1.9	
9.8	7	3.1	5.1		9.2		20.4	25.5		9.5		45.8	41.1		9.8		34.9	35.7		9.0		17.1	7.2	K
8.9		4.2	50.6	M	9.2		22.2	13.1	M	9.6	26	54.9	5.7		9.5		35.4	27.5		9.8		53.4	51.3	
9.3		7.7	41.3		9.8		26.3	6.2		9.4	27	14.6	29.3		9.5		50.8	49.4		9.5	49	0.4	56.7	
9.5		12.9	13.0		9.4		28.1	20.8		9.5		19.5	44.4		9.5		52.8	53.8		8.8		13.6	31.1	Sj
10		33.4	9.3		9.4		30.6	27.5		9.4		40.9	9.0		9.5		57.4	28.6		9.7		24.3	35.7	
9.1		35.0	0.4		9.5		40.2	24.4		8.0		44.2	34.9	Sj	9.2	38	2.5	5.9		9.4		29.2	38.8	
9.7		36.9	24.6		9.0	16	0.9	39.4	K	9.9		44.2	21.1		9.2		7.5	34.6		9.5		33.9	57.2	

5190: 5:06 32′58″.1 B_1, Ep. 1883.64

5301—5360				5361—5420				5421—5480				5481—5540				5541—5600			
	19h	−9°			19h—20h	−9°			20h	−9°			20h	−9°			20h	−9°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	49 49.1	1.3		9.8	59 37.1	33.5		9.1	10 4.9	15.0		9.3	22 36.7	54.1		9.8	33 17.0	4.0	
8.1	52.9	36.2	K	9.6	46.0	2.1		9.2	27.2	21.5		9.1	45.2	36.3	K	9.3	20.4	21.7	
7.4	50 1.0	26.2	K	9.0	57.8	25.3		10	44.4	30.2		9.8	57.8	51.8		9.1	28.0	10.9	
8.6	7.0	27.4	K	8.8	0 2.1	46.2	K	9.5	58.7	12.0		9.5	23 19.4	40.8		9.9	31.1	43.2	
9.3	10.5	49.2		9.1	11.4	27.5		9.6	11 17.1	29.0		9.7	44.3	45.2		9.4	41.2	33.5	
9.5	36.0	45.2		9.2	37.6	41.7		9.4	22.8	10.6		9.6	53.0	51.7		8.8	44.5	19.0	
9.5	51 0.6	6.7		9.4	39.1	46.7		9.6	32.7	8.2		9.8	24 3.5	3.8		9.2	34 3.0	0.4	Sj
9.1	8.4	57.9	M	9.8	1 12.0	56.2		9.1	42.9	53.7		9.8	4.8	28.0		10	3.1	47.1	
9.8	24.9	53.9		9.8	12.6	38.4		9.2	49.2	25.2		9.5	19.9	36.1		9.7	5.0	3.3	M
9.8	36.0	51.2		9.3	18.1	37.9		9.9	12 1.8	34.7		9.2	56.7	22.8	L	8.0	5.5	16.9	K
8.5	48.8	16.5	WZ	9.5	25.7	17.0		9.4	18.2	28.5		9.3	58.4	51.3	M	10	15.0	21.4	
10	53.0	43.7		9.4	38.2	17.0		9.1	18.5	39.8	K	8.3	25 9.3	30.4	L	9.3	37.5	9.3	K
9.5	52 2.0	38.8		8.7	44.7	35.0	M	9.1	41.9	25.6	Sj	9.7	11.5	18.0		9.6	45.4	19.2	
9.1	13.4	49.6		9.8	2 2.7	32.9		9.0	43.7	38.4	K	10	35.2	46.0		9.7	56.5	19.2	M
9.8	25.3	18.2		9.4	12.7	12.4		9.5	45.3	33.4		10	51.0	20.1		9.5	59.6	41.5	
8.2	25.3	3.6	K	9.5	30.3	26.8		9.1	47.2	50.8		9.8	56.9	43.3		9.9	35 6.9	33.5	
9.8	27.0	30.4		9.0	37.9	17.6	M	8.9	48.4	49.7	K	9.0	26 6.0	15.5	K	9.8	34.1	38.9	
9.3	42.0	34.9		9.5	41.1	22.3		9.5	57.3	17.4		9.5	29.1	32.4		10	36 2.3	21.7	
9.5	47.1	25.3		9.1	54.2	42.3		9.5	13 16.8	20.7		9.6	36.0	3.2		9.8	16.2	15.0	
9.5	48.6	34.7		10	3 5.6	51.2		9.2	30.5	3.9	Sj	9.1	40.5	26.9	Sj	7.8	25.7	34.1	Sj
9.4	55.5	50.8		9.8	16.6	20.2		9.2	30.9	30.7		8.9	56.3	34.4	K	8.6	40.9	29.6	K
9.4	59.0	13.7		6.5	18.9	16.0	Sj	9.5	35.8	11.4		9.4	27 6.4	35.7	M	9.2	45.5	34.8	M
8.9	53 28.1	14.8	Sj	9.9	28.6	39.5		9.8	36.4	56.6		9.1	7.0	0.5		9.0	55.6	47.8	L
8.0	28.9	53.1	L	9.3	34.7	12.2		8.2	14 42.7	28.5		9.8	13.4	46.1		9.7	37 2.8	3.2	
9.5	34.0	24.2		9.4	58.2	19.6		7.5	43.3	17.2	M	9.1	20.5	8.8	K	9.6	7.7	13.1	
9.3	41.1	12.8		9.5	4 1.6	51.7		9.8	51.4	0.1		9.8	21.7	27.9		9.8	24.6	18.7	
9.2	53.7	48.6		9.4	19.8	24.5		9.8	15 0.1	3.7		8.3	23.5	30.0	K	8.5	36.0	39.4	K
9.5	54 17.6	10.8		9.8	23.2	42.8		9.3	6.1	59.8		9.9	27.9	47.1		9.8	38.1	27.9	
9.8	27.0	43.0		9.4	26.9	16.9	Sj	9.5	42.5	13.4		9.1	29.3	52.2	M	9.8	38.1	20.8	
9.1	33.0	47.2		9.5	55.2	4.0		9.1	46.1	6.8		9.7	28 6.5	47.8		9.5	44.7	24.2	M
9.6	33.6	22.8		10	57.8	35.2		10	54.6	7.2		9.5	22.0	16.4		9.5	56.6	39.1	
9.0	41.9	58.7	M	10	57.9	42.8		9.0	56.1	13.8	K	8.7	35.5	49.9	K	9.4	38 12.2	31.0	M
9.5	49.1	16.1		9.4	5 11.1	18.5		9.1	16 4.4	20.5	K	9.0	41.4	43.0	K	9.1	23.1	36.0	K
9.5	52.5	19.5		9.3	11.7	19.8		9.4	14.9	13.4		9.5	45.5	17.5		9.8	47.0	42.2	
9.1	55 1.0	21.3	K	9.0	48.1	36.1	M	9.0	33.2	1.1	Sj	9.3	52.3	35.4		9.1	50.8	46.9	M
8.3	4.1	13.8	Sj	9.7	54.1	33.4		9.1	37.6	30.9		8.7	57.0	41.2	K	9.9	39 10.0	51.0	
7.8	8.3	20.3	Sj	9.8	6 11.2	41.0		7.0	53.6	14.0	K	9.7	29 7.2	32.2		9.5	20.9	32.7	
9.3	25.7	8.2		9.4	41.2	41.6	M	9.4	55.1	23.7		9.0	12.4	15.9	M	9.4	40.1	41.6	
10	51.5	49.3		10	43.1	52.0		10	58.0	47.4		10	42.5	5.8		9.3	41.1	33.6	M
9.0	57.6	7.7	Sj	9.3	53.7	23.6		10	17 3.6	8.4		9.8	49.4	20.4		9.3	40 5.1	47.7	
9.8	57.7	21.4		9.3	54.4	47.3	M	10	7.9	34.6		9.8	49.7	39.6		9.0	14.2	49.5	
9.4	56 6.6	27.3		9.8	7 8.8	13.9		9.7	20.0	36.2	M	9.6	55.1	55.3		9.5	16.2	13.5	
7.6	7.8	30.8	K	9.1	26.8	21.5	Sj	9.7	47.0	28.9	M	9.5	55.3	29.6		9.2	46.7	21.6	M
8.5	8.3	36.0	K	9.0	32.1	27.0	K	8.7	18 0.8	5.2	K	9.3	30 2.7	2.1	M	9.4	41 13.0	34.2	
9.3	10.3	45.6		9.6	37.3	49.8		10	18.3	44.2		8.4	8.7	2.1	Sj	9.8	17.6	25.0	
9.5	10.7	16.3		9.6	47.5	12.7		9.3	19 7.3	50.0		9.3	9.4	11.6	M	9.0	20.6	17.8	M
8.2	34.3	50.6	L	9.4	8 3.0	58.7		9.6	15.0	33.0		9.4	10.1	18.6		8.1	30.9	19.2	M
9.8	48.0	12.1		9.5	17.4	45.8		9.1	16.4	36.4	K	9.2	23.0	41.8	K	9.3	35.2	47.2	
9.2	53.6	43.2		9.5	29.2	48.0		10	20 2.7	53.2		9.2	45.1	2.3	K	9.1	42.6	59.3	K
9.8	57 7.5	20.7		9.7	41.7	52.4		9.7	4.2	57.2		9.7	55.1	18.1		8.5	44.1	10.8	Sj
9.5	14.1	37.9		10	47.6	52.4		9.5	4.9	55.8		9.7	31 1.1	7.2	M	9.3	42 5.9	22.3	Sj
9.6	38.4	14.7		9.5	55.3	35.9		9.5	20.8	17.8		9.0	14.0	14.7	M	9.5	38.5	40.6	
9.5	42.1	43.2		9.5	9 1.1	57.6		7.0	34.8	50.8	Sj	10	21.4	53.7		10	43 44.0	28.4	
9.1	58 26.5	56.3	M	9.1	38.7	46.5	M	9.0	36.3	11.0		9.2	44.6	33.7	K	9.7	50.1	32.5	
9.8	53.6	24.6		9.5	40.1	33.1		10	40.1	23.2		9.5	57.9	14.1		8.9	44 8.0	35.1	K
7.5	59 3.2	19.5	L	9.8	50.8	8.4		9.8	47.4	37.6		9.9	32 32.0	46.8		9.1	9.6	56.2	L
9.3	8.1	43.1		8.5	51.4	18.0	Sj	9.0	21 1.3	5.5	Sj	8.5	41.3	54.9	K	9.1	40.7	24.9	K
9.3	13.7	22.4		10	55.3	33.6		9.6	27.0	31.9		10	53.5	30.6		5.1	49.6	31.1	Sj
9.3	17.2	21.7		9.8	59.5	32.4		9.0	34.8	33.8	K	10	55.5	8.0		9.4	45 10.1	36.8	
10	18.1	37.0		10	10 2.0	47.1		10	49.1	3.5		8.5	33 5.2	9.1	WC	9.1	16.1	5.0	

5343: 7h02 31′45″7 B_1, Ep. 1884.63 5518: 12h91 15′47″9 B_1, Ep. 1884.63
5587: 30h54 19′38″8 B_1, Ep. 1883.65

5601—5660					5661—5720					5721—5780					5781—5840					5841—5900				
	20^h		−9°			21^h		−9°			21^h		−9°			21^h		−9°			21^h		−9°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.3	45	20.9	35.0		8.4	0	1.2	0.7	L	9.6	13	50.5	14.4		9.1	28	50.9	23.0	M	10	40	7.6	42.0	
9.4		23.9	46.6		9.0		16.2	16.2		9.3		55.0	47.3		8.0		51.3	41.5	K	9.8		16.1	47.9	
9.3		31.6	15.3		9.1		18.0	43.8		9.6		56.0	22.9		9.1	29	3.4	2.7	R	9.0		18.2	36.3	Sj
9.9		33.0	27.6		10		21.7	52.3		7.0	14	11.9	56.2	L	9.1		18.5	19.0	K	9.3		22.9	52.5	
10		36.2	10.9		9.4		47.7	16.9		9.7		19.7	24.9		9.8		22.7	36.9		10		31.5	34.8	
9.7	46	4.5	7.4		9.4		58.7	26.0		9.8		47.0	11.7		9.4	30	1.4	5.3		9.2		36.9	34.1	
9.1		27.7	59.1	M	9.0	1	23.2	11.3	Sj	9.5		52.4	32.2		9.8		6.9	56.4		9.8		39.7	13.8	
8.5		34.3	3.3	K	9.0		41.8	44.1	M	6.5	15	9.9	55.8	Sj	8.5		11.0	20.8	K	9.4	41	20.6	19.2	
9.0		35.7	22.4	K	9.9		42.5	2.2		9.6		17.5	51.6		9.6		16.7	8.8		9.3		21.7	18.8	
9.5		52.0	16.9		10	2	34.3	48.0		9.5		33.4	53.2		9.1		17.0	14.7	M	9.2		27.0	26.8	
7.6		57.9	25.7	K	9.2		36.4	26.3	R	9.5	16	7.1	20.3		9.8		24.5	7.8		9.5		44.2	12.5	
9.4	47	8.9	3.1		9.6		43.7	7.0		9.6		15.5	44.5		8.5		37.4	54.0	Sj	10	42	7.5	6.3	
9.5		14.8	32.7		9.4		46.7	11.9	M	9.5		18.7	24.9		10		54.3	50.6		9.7		25.5	34.1	
10		24.9	43.1		6.7		58.3	56.2	Sj	9.5		20.3	11.4	M	9.9		56.0	20.5		7.0		51.7	39.3	Sj
9.0		46.0	14.7	K	9.7	3	9.8	3.9		10		27.5	44.6		9.4		56.9	46.0	K	10	43	5.5	42.7	
9.8	48	26.0	15.9	M	9.7		10.8	35.3		9.5		53.6	9.4		9.8		58.4	15.0		9.3		28.0	30.6	
9.1	49	18.7	21.8	M	9.4		24.3	47.8	R	9.5		57.0	40.2		9.0	31	9.4	44.6	Sj	9.8		28.6	51.4	
9.5		23.7	3.2		9.3		25.8	58.0	M	9.2		59.6	16.7	M	8.8		11.4	2.2	K	9.8	44	4.7	43.1	
9.8		24.7	41.4		9.8		30.7	12.3		9.9	17	11.1	20.4		9.6		23.8	31.3		9.8		6.0	32.2	
10		28.7	41.4		9.5		35.2	10.3		8.8		52.1	11.0	Sj	9.8		42.5	51.2		9.8		24.2	23.0	
9.9		49.7	33.8		9.6		35.8	18.6		9.4		54.0	52.7	Sj	9.8		43.7	34.0		9.8		26.6	6.8	
9.3		59.5	46.5		9.8		40.3	2.7		9.8		55.1	2.6		8.8		53.5	43.7	K	9.3		33.0	36.5	
9.5		59.7	0.2		9.7		52.8	7.4		9.8	18	17.6	5.8		9.7	32	4.4	26.0		9.7	45	18.3	30.5	
9.9	50	12.2	1.2		9.8		59.3	32.4		9.5		23.0	37.0		9.3		12.0	20.6		9.5		27.0	10.8	
9.5		16.7	12.7		10	4	26.3	28.6		9.5		40.1	20.0		9.1		14.9	53.9	M	9.3		28.5	9.0	
9.7		40.1	27.3		9.8		36.3	50.4		9.8	19	3.8	1.5		10		33.6	56.5		8.8		56.3	5.0	Sj
9.0		45.5	23.7	K	9.3		38.3	22.7		7.5		30.8	24.9	K	10		34.3	45.6		9.8	46	20.6	36.0	
9.5		49.7	41.8		9.1		41.2	15.5	K	8.5		33.0	39.6	K	10	33	11.5	59.3		9.8		27.8	52.0	
10		53.2	28.5		9.1		54.3	13.5	K	9.5		41.4	27.2		8.0		14.0	47.7	Sj	9.0		36.0	12.8	
9.2	51	0.8	36.9		10	5	22.7	12.2		9.9		55.6	35.0		10		16.4	2.1		9.3	47	29.0	20.5	
9.0		1.4	54.4	K	9.3		42.3	41.5		9.4	20	6.6	18.3	M	9.7		53.4	17.3		9.1		54.7	25.3	
9.0		4.6	52.2	K	9.8	6	28.8	16.0		9.1		58.0	34.3	K	8.5	34	28.0	23.2	K	9.8	48	1.6	59.0	
9.6		6.0	43.5		9.5		40.5	30.6		7.5	21	7.0	37.3	Sj	9.6		29.9	2.7		9.5		55.9	2.8	
9.7		6.3	22.3		9.1		49.1	24.5		9.5		7.7	6.6		9.5		41.4	17.7		9.5	49	17.8	46.1	
9.2		7.6	55.1	K	9.4	7	30.6	33.0		9.8		14.9	25.3		8.2		45.5	7.4	K	9.1		51.3	39.3	
9.0		33.5	26.4	M	8.7		44.3	53.0	R	9.1		35.9	1.9		9.3		52.6	1.7		7.5		57.8	14.7	Sj
9.3		44.1	24.9		9.8	8	0.4	11.8		9.0		50.6	6.4	K	9.8		59.4	31.8		8.7		59.8	16.5	K
9.5		44.5	13.1		7.2		1.9	42.8	K	8.8	22	13.9	14.1	K	9.8	35	5.0	37.4		9.0	50	53.5	0.9	
10	52	0.3	45.9		8.0		7.5	59.3	L	9.9		49.8	8.0		9.1		6.0	3.7	K	8.9		59.8	9.8	L
9.5		21.8	15.4		7.0		30.8	48.8	K	9.7		59.0	55.7		8.5		18.0	59.2	L	9.3	51	18.9	45.9	
9.6	53	11.8	41.9		8.1		42.9	45.4	K	9.5	23	12.2	39.0		9.8		19.0	49.4		8.7		32.4	39.4	L
9.5		51.2	53.0		9.0		59.3	55.8	K	8.8		43.3	22.4	K	10		43.4	49.3		9.8	52	12.8	21.7	
10	54	13.6	54.2		9.5	9	6.9	46.7	M	9.1		43.8	39.7	M	9.8		53.5	10.8		9.1		20.9	52.3	
9.6	55	27.6	27.7		9.3		31.0	8.3		9.5	24	57.3	45.5	M	9.5		56.6	38.2	R	8.5		53.8	13.2	Sj
9.1		43.6	9.2	R	9.5		34.3	31.4		9.4	25	23.8	51.6		9.5	36	3.1	7.0		9.5	53	5.3	59.5	
10		49.7	37.5		9.3		55.3	27.6		9.4		37.8	1.7		9.0	37	3.5	42.7	K	9.7		12.4	26.7	
9.5	56	13.1	16.0		9.0	10	57.5	2.5	K	8.5		54.3	46.8	K	8.0		11.6	42.0	Sj	9.3		17.7	34.5	
9.0		41.7	50.5	K	9.8	11	8.4	51.2		9.7		55.3	6.7		10		12.0	12.3		9.4		19.3	49.0	
9.9		42.3	8.3		9.0		22.9	46.8	K	9.1	26	9.4	13.2	M	5.5		16.1	44.8	K	10		27.6	32.9	
8.3		57.1	20.9	Sj	9.9		24.4	37.8		8.0		57.9	43.5	Sj	9.8		29.0	56.3		9.5		40.6	28.8	
9.3	57	6.6	5.4		9.3		57.8	23.2		9.1		58.5	35.1	L	9.5		48.1	5.1		10		44.0	0.2	
8.6	58	8.0	24.7	K	9.4	12	21.3	33.4		9.1	27	13.0	29.3	K	9.6		58.1	49.2		10		49.4	36.2	
9.3		27.2	54.4		9.9		23.6	56.2		10		27.4	23.0		6.7	38	32.0	56.5	Sj	9.0		55.4	34.6	Sj
9.5		27.7	48.5	M	9.7		37.0	33.4		10		34.8	54.2		10		35.0	26.7		9.8	54	0.8	23.5	
9.8		59.3	20.4		8.0	13	3.5	45.7	Sj	10		47.6	49.0		10		35.4	9.1		9.7		8.6	34.1	
9.5	59	2.2	38.4		9.0		7.7	39.1	K	10		48.0	16.7		9.5		41.5	30.4		8.5		24.9	58.5	B
9.4		3.5	24.2		9.6		8.0	4.5		9.5		56.4	57.2		9.4		50.5	31.9		9.4		48.9	21.9	
9.3		25.2	21.4	Sj	9.5		36.0	9.5	M	10	28	11.4	47.4		8.5		58.6	6.2	L	9.5		49.7	52.0	
10		39.9	59.9		9.9		39.1	30.2		9.1		33.3	44.7		8.5	39	8.6	8.4	L	9.0	55	1.2	34.9	L
9.8		48.7	30.6		9.8		48.5	9.0		10		47.4	11.9		9.8		25.6	21.4		9.5		14.4	6.3	

5724: 11:54 56′27″2 B_1, Ep. 1883.65.r. 5866: 56:03 4′48″6 B_1, Ep. 1883.64

5901—5960					5961—6020					6021—6080					6081—6140					6141—6200				
	21h—22h		−9°			22h		−9°			22h		−9°			22h—23h		−9°			23h		−9°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
7.8	55	20.4	11.9	Sj	10	12	43.9	4.2		8.6	31	20.8	26.1	K	9.4	46	54.7	7.3		10	4	1.5	3.3	
10		22.9	38.1		9.0		54.5	46.4	K	10		28.4	42.0		10	47	8.2	33.4		8.3		22.2	48.4	Sj
9.1		26.4	48.6	Sj	7.2	13	11.3	29.7	B	10		53.7	24.6		9.5		15.1	2.4		9.6		38.6	33.8	
9.6		41.4	11.5		10		20.5	42.5		9.7	32	10.8	19.9		9.9		45.2	49.5		10		48.0	45.2	
9.2	56	18.2	36.9		9.8	14	2.4	36.9		10		11.9	0.3		9.2	48	4.8	33.8		9.0		55.4	4.0	K
9.5		22.2	33.9		9.0		22.6	28.8	Sj	10		16.0	48.9		10		14.2	27.5		8.1	5	55.7	42.0	K
9.8		31.4	19.6		9.8		34.2	21.3		9.4		39.4	42.8		10		24.1	23.4		8.8	6	10.1	34.8	K
7.3		50.5	25.3	Sj	10	15	23.0	33.8		10		55.4	34.7		9.7		49.8	31.3		10		24.0	24.3	
9.9	57	25.2	25.8		9.8		37.5	41.1		10	33	0.4	16.1		9.7		58.2	29.5		8.2		30.2	43.0	B
9.2	58	11.4	11.6	Sj	9.6	16	39.4	25.6		10		0.4	42.0		9.2	49	6.7	42.4		9.0		30.5	43.4	B
9.5		12.2	40.9		10	17	8.1	42.0		9.6		37.8	34.7		9.8		50.3	33.7		8.5		35.0	10.8	Sj
9.7		21.5	26.5		10		39.6	44.5		10		53.9	17.9		9.8	50	45.3	46.2		9.1		39.2	43.9	K
9.9		34.0	45.1		9.8		56.8	24.5		9.5	34	15.8	1.4		8.8	51	1.7	13.6	M	9.3	7	13.1	17.7	
9.5		38.9	59.9		9.3		57.3	13.9		10		28.9	2.9		9.3		6.6	9.3		9.2		51.3	34.4	
9.5		48.7	26.0		9.8		58.3	20.6		9.0		35.9	12.0	Sj	9.4		21.3	52.1		9.4	8	14.7	51.8	K
9.8	59	8.3	34.8		8.5	18	14.6	41.5	B	9.8		37.9	3.8		9.4		38.2	16.2	M	5.0		18.3	52.5	K
8.9		9.5	36.7	K	10		29.9	21.0		8.5	35	23.4	54.4	Sj	9.1		45.5	20.4	K*	9.5		50.4	44.5	
9.1		14.0	29.9		7.8	19	8.8	14.4	K	7.0		28.9	4.0	K	9.5		58.4	19.8		9.7	9	0.2	25.3	
9.5		29.2	53.4		10		23.6	52.0		8.9		50.9	10.5	K	9.8	52	16.7	55.5		8.9	10	12.6	8.4	K
8.5		36.5	53.4	Sj	9.6		28.1	36.3		10		58.9	47.7		7.0		44.7	39.3	Sj	5.5		21.7	58.2	K
9.7		51.0	26.8		9.5		34.3	8.3		9.0	36	21.0	12.9	K	10		50.5	30.0		9.3		45.1	10.5	
9.8	0	26.0	52.6		8.7	20	16.0	30.4	K	9.6		32.0	37.7		10	53	51.4	20.5		10	11	22.6	5.2	
9.4		49.4	4.7		9.5		37.9	29.2		9.0		37.0	46.7	K	9.8	54	0.7	13.6		10		25.1	3.5	
9.5	1	18.3	9.6		9.3		53.6	30.1		9.2		39.0	49.4	K	9.5		14.6	36.3		9.2		29.4	51.6	Sj
10		24.8	50.0		9.2	21	35.2	47.6		9.4		52.9	16.0	K	10		24.0	47.4		9.8		39.1	29.7	
9.5		47.2	23.3		10	22	9.6	29.4		9.8	37	1.5	47.0		9.7		31.1	40.7		9.4		49.3	40.0	
8.5		49.9	30.5	K	9.1		11.1	45.5	R	9.5		12.9	54.4		9.4		44.9	28.2		9.4		51.0	5.3	
9.2	2	28.0	0.2		8.5		18.7	9.1	K	9.4		41.5	44.8		9.6	55	0.4	25.4		9.9	12	2.4	33.7	
10	3	40.5	8.8		9.4		58.4	26.4		9.8		47.4	0.1		9.3		29.2	35.1		9.4	13	0.6	1.5	
9.2		54.6	15.7	R	9.4		59.2	34.7		9.5	38	5.9	19.7		9.4	56	20.3	11.8		9.1		3.7	20.6	WC
9.9		59.5	4.9		10	23	18.6	35.1		9.2		16.5	0.7	K	9.4	57	8.8	19.5		8.0		7.9	43.3	K
9.7	4	4.6	9.0		9.8		20.5	58.0		10		43.9	3.2		9.8		11.5	21.6		9.1		30.2	17.3	B
9.9		10.9	55.7		10		28.7	8.4		10		46.0	11.3		9.8		32.8	40.3		7.5		40.1	28.1	K
9.0	5	33.1	50.9	K	9.4	24	11.7	6.3		8.2		46.0	9.0	Sj	9.6		37.6	40.7		9.7		55.4	41.3	
10		42.3	19.2		9.6		25.6	34.5		9.5		49.4	6.0		10		46.2	21.3		9.8	14	1.4	38.8	
9.7		55.0	21.0		8.6		49.2	1.7	Sj	9.5	39	26.5	39.6		8.9	58	17.6	40.2		10		28.4	33.8	
9.5	6	4.6	55.4		10		51.7	9.7		9.3	40	1.0	6.8	M	8.9		52.5	31.8		9.4		34.2	2.3	
10		16.9	58.5		9.7	25	0.7	46.2		9.5		21.7	34.2		8.3	59	1.5	25.2	Sj	9.8	15	10.9	32.0	
10		35.0	6.7		10		15.0	20.0		9.1		28.9	8.3	K	10		35.4	25.0		9.2		46.8	15.9	
9.5	7	0.6	34.3		9.0		29.6	57.3	K	9.5		32.0	26.9		9.6		37.0	18.3		9.3		47.5	18.4	
9.5		15.1	50.8		8.5		40.7	48.1	K	9.5		44.0	21.2		10		40.6	21.1		8.5		54.0	40.9	K
8.3		20.1	41.5	K	10		50.4	14.3		9.5		51.3	49.4		9.5		42.3	5.8		10	16	10.4	59.6	
8.3		54.9	6.8	Sj	10		51.2	46.4		9.1	41	20.1	42.3	K	8.0		43.2	35.7	K	7.2		13.5	15.1	K
9.5	8	31.1	7.0		9.5	26	11.3	7.0		9.2		21.1	37.6	Sj	9.2		56.1	26.1		8.8	17	7.7	41.9	
9.4		32.3	5.4		9.6		10.8	52.0		9.8		44.6	2.5		9.8	0	35.3	3.2		10		48.7	3.9	
9.5		38.2	41.0		9.7		30.0	24.9		10	42	6.0	11.2		9.9		42.8	3.9		9.2	18	7.0	21.4	Sj
9.3		58.6	5.6		9.0		54.7	53.1		9.9		6.1	49.5		9.8		50.0	25.1		9.5		10.8	19.2	
9.2	9	12.6	45.3	Sj	9.8	27	0.8	45.9		9.7		9.4	25.7		8.5		53.9	47.5	K	10		22.7	4.3	
9.5		24.7	15.0		8.6		4.7	21.6		10		48.5	8.3		9.4		54.4	55.6		9.5		26.1	22.3	
9.8		39.7	21.1		9.1		17.3	38.5		10		56.5	9.6		9.0	1	9.4	8.1		9.9	19	1.6	24.0	
9.8		58.1	7.3		9.2		21.7	59.5	R	10	43	14.1	49.2		8.9		16.8	35.4	L	10		4.5	8.4	
9.5	10	41.6	5.3		8.7		34.2	8.8	Sj	10		38.6	14.6		10		19.7	22.1		9.3		16.4	37.3	
9.0	11	9.3	56.2	B	9.0	28	20.8	36.5		9.0		41.5	4.0	K	8.9		45.2	58.5	B	9.3		34.0	47.5	
10		11.9	38.1		10		28.7	8.5		9.2		44.0	25.8	K	8.9		56.6	36.9	Sj	10		45.7	4.3	
10		22.9	18.5		9.0	29	6.3	41.7		9.1	44	10.6	19.2	Sj	9.9	2	37.3	0.8		9.8	20	2.7	4.4	
10		29.4	21.9		8.8		9.8	10.8		9.8	45	25.0	9.9		10		54.7	47.5		9.5		10.2	33.2	
9.8		44.2	39.5		8.9		47.3	16.5		9.3		48.2	52.0	K	10	3	13.1	8.4		8.3	21	3.9	19.3	K
8.7		47.1	13.5	Sj	9.5		48.8	3.5		9.5		52.7	41.8		8.7		21.2	24.6	Sj	9.3		26.1	57.5	
9.2	12	7.4	33.9		9.8	30	23.8	37.0		9.5	46	32.6	58.5		8.9		37.3	59.8	K	9.5		30.7	6.6	
9.8		17.2	8.1		10	31	5.7	54.7		9.7		33.3	31.8		9.9		47.9	7.0		10		54.0	18.5	

6171: 7ʰ33 42′46″3 B_2, Ep. 1873.00

6201—6220

m	23h m s	−9° ′	
9.4	22 7.0	48.7	
8.7	8.7	28.0	Sj
9.4	39.1	44.0	
9.8	42.0	18.0	
9.3	23 18.6	22.7	
8.5	24 16.2	7.5	Sj
9.9	19.3	4.8	
9.2	30.8	8.2	
9.3	38.5	44.3	
7.8	25 26.2	57.6	K
10	27.2	2.8	
9.3	53.9	12.2	
9.4	26 3.9	9.6	
9.8	25.3	7.5	
9.4	27 31.5	0.9	
9.0	33.6	10.6	
9.2	58.2	47.4	
10	28 7.4	57.6	
9.7	19.3	27.9	
7.4	31.6	34.2	Sj

6221—6240

m	23h m s	−9° ′	
9.0	28 54.0	9.1	K
9.1	29 26.4	25.1	
10	30 9.2	20.3	
7.2	42.4	25.8	K
9.2	31 28.3	44.5	M
9.4	59.2	37.1	
9.2	32 10.3	40.2	
9.1	22.6	22.5	
10	23.8	20.7	
10	31.9	30.8	
9.8	47.7	31.6	
8.9	33 54.6	26.2	K
8.3	34 8.3	37.6	Sj
9.1	23.6	9.6	
9.4	34.8	37.5	
10	37.6	4.9	
8.3	55.3	37.8	K
9.2	35 33.2	25.5	
9.1	36.4	46.0	K
9.7	39.5	25.2	

6241—6260

m	23h m s	−9° ′	
9.5	35 42.2	21.0	
8.5	56.8	50.7	K
9.5	36 2.9	47.6	
8.8	34.1	4.7	Sj
9.8	42.0	3.8	
9.5	44.9	51.7	
8.2	37 10.7	39.6	B
7.3	14.2	16.4	K
9.7	26.3	13.9	
9.7	42.5	56.6	
9.4	58.0	0.8	
9.3	38 4.6	0.1	
9.8	5.7	8.4	
9.7	23.3	24.8	
9.8	26.2	4.7	
9.0	50.1	27.6	
10	39 2.9	48.3	
7.5	4.7	48.1	Sj
9.7	12.6	26.0	
7.7	22.9	41.8	K

6261—6280

m	23h m s	−9° ′	
9.2	39 43.2	28.2	R
9.5	40 37.1	27.1	
9.9	56.2	3.8	
9.1	41 4.0	38.3	
9.5	56.9	17.9	
9.5	42 2.6	0.1	
9.5	7.0	22.6	
9.5	42.1	29.9	
10	43 7.8	59.2	
9.6	20.9	25.4	
9.5	44 1.3	7.5	
9.7	43.7	51.9	
9.5	49.2	33.1	
9.5	45 7.7	57.3	
8.5	17.8	42.4	K
8.8	18.5	57.4	K
6.2	22.9	48.1	K
9.4	25.4	21.1	
10	46 15.1	52.7	
9.2	32.9	33.1	

6281—6300

m	23h m s	−9° ′	
9.9	46 58.8	44.6	
9.8	47 7.0	7.2	
9.8	7.9	23.9	
9.1	39.6	21.7	
8.8	40.5	14.8	
8.8	55.0	33.3	K
8.0	48 17.7	51.8	K
9.5	30.6	22.5	
10	33.1	51.7	
9.9	48.8	20.3	
9.2	49 0.0	31.5	
9.6	7.0	34.3	
9.5	24.6	32.4	
var	50 29.0	46.1	
8.5	51 21.5	38.1	
7.8	41.7	17.9	K
9.2	52 1.9	3.6	
10	2.8	47.8	
9.6	29.1	47.1	
9.0	41.6	0.3	Sj

6301—6307

m	23h m s	−9° ′
8.9	52 57.9	54.2
9.5	53 18.8	50.0
9.8	30.1	15.0
8.8	52.9	44.1
9.2	54 12.7	20.0
9.1	15.4	59.3
9.0	46.3	47.7

6308—6314

m	23h m s	−9° ′	
9.4	54 47.8	23.7	
8.0	51.9	59.3	K
8.5	55 13.7	17.5	K
9.8	34.5	2.6	
10	56 36.6	7.7	
9.5	50.0	6.5	
9.5	57 11.0	18.6	

6315—6320

m	23h m s	−9° ′	
9.5	57 14.4	43.2	
9.5	57.5	47.7	
9.1	58 22.2	50.4	
10	22.2	49.1	
8.8	25.8	21.0	K
9.1	33.9	38.8	

6321—6326

m	23h m s	−9° ′	
9.5	58 56.6	3.1	
9.8	59 23.2	38.3	
9.0	27.2	12.0	
10	28.3	47.3	
9.1	34.6	35.3	K
10	55.2	35.6	

Zone −10°

1—20

m	0h m s	−10° ′	
10	0 0.6	15.4	
10	41.4	21.1	
9.5	51.0	10.0	
9.3	1 8.5	38.7	
9.3	29.7	50.3	
9.2	32.7	55.4	
9.6	49.8	57.5	
9.8	52.8	52.2	
8.0	2 5.5	59.6	K
9.5	45.2	25.6	
8.5	3 4.2	6.3	K
9.8	4.8	30.1	
9.4	42.0	27.0	
9.3	4 5.7	0.9	
9.6	14.5	21.6	
8.0	15.6	30.0	K
9.9	38.0	49.6	
9.5	42.5	25.5	
9.4	5 35.8	50.0	
10	45.6	19.6	

21—40

m	0h m s	−10° ′	
9.8	6 5.4	31.4	
10	7.9	12.9	
9.0	30.7	42.4	
9.6	31.6	59.9	
8.6	31.9	33.3	L
10	35.6	0.6	
8.8	7 16.0	13.0	K
9.3	17.8	9.6	
9.0	18.3	44.4	K
6.5	30.1	22.5	K
9.1	42.0	12.1	
10	8 31.4	22.9	
9.5	34.9	48.6	
8.1	35.8	16.9	K
9.3	9 18.0	59.3	
10	29.2	34.7	
9.1	34.6	5.9	
9.5	50.3	46.1	
9.2	10 3.3	10.2	
9.8	13.5	16.0	

41—60

m	0h m s	−10° ′	
9.1	10 22.1	13.3	
9.8	35.4	48.7	
10	45.7	15.0	
9.8	46.4	3.2	
9.2	11 12.3	15.4	
9.5	32.4	44.4	
9.1	42.9	45.7	
10	12 11.3	9.7	
10	12.9	50.8	
10	15.2	0.4	
10	30.4	46.0	
9.3	51.3	13.5	
9.9	13 8.8	40.0	
10	37.9	42.5	
8.7	47.2	2.3	K
8.6	14 34.5	42.7	K
8.0	15 19.7	25.5	Sj
7.8	23.8	1.9	
9.2	25.3	27.5	
8.5	25.8	5.0	K

61—80

m	0h m s	−10° ′	
9.1	15 53.4	46.9	
9.4	16 25.5	16.1	
9.8	31.4	34.2	
10	36.9	0.5	
var	41.3	8.1	
9.6	17 10.1	42.3	
9.4	50.0	46.0	
9.2	58.4	53.2	
9.4	18 9.2	53.2	
9.8	12.4	2.5	
9.2	32.3	22.0	
9.0	59.0	36.8	
9.5	19 9.9	33.4	
9.5	13.1	44.1	
9.6	44.6	15.9	
7.2	45.5	40.8	K
9.9	51.7	34.7	
8.8	20 7.7	10.1	
9.4	44.8	23.3	
9.3	21 7.0	1.6	

81—100

m	0h m s	−10° ′	
8.9	21 14.9	21.7	
8.3	17.1	12.6	K
9.3	50.6	34.5	
10	51.4	42.7	
8.7	22 47.3	2.2	Sj
8.9	23 9.5	28.8	R
9.1	15.7	11.9	
7.7	20.1	12.6	L
7.2	38.3	52.7	Sj
8.6	43.8	52.7	K
9.4	24 9.2	41.8	
10	11.7	46.5	
8.8	29.8	11.6	K
9.4	41.8	49.4	
8.9	42.6	12.8	K
9.5	51.9	12.4	
9.4	25 32.6	5.6	
9.5	45.1	27.1	
8.3	47.0	47.3	K
9.3	26 6.3	25.5	

6248: 13:87 16′0″.7 B_1, Ep. 1871.97 65: 40:86 7′55″.9 B_2, Ep. 1873.01

101—160

	0h	−10°	
m	m s	′	
9.6	26 9.2	16.9	
9.5	25.9	55.8	
9.8	47.0	25.5	
10	27 29.1	27.3	
10	29.9	19.3	
9.8	56.3	36.8	
9.3	59.7	55.4	
9.0	28 0.1	30.4	
10	39.0	18.7	
8.8	51.4	48.5	
9.8	29 11.0	12.5	
9.8	24.2	24.1	
9.5	39.1	12.4	
10	30 9.5	53.0	
9.5	51.4	46.3	
9.5	57.3	40.1	
9.2	31 11.6	54.1	
9.8	23.9	40.6	
9.5	31.6	14.9	
9.5	55.2	26.1	
9.5	32 10.0	17.4	
10	10.5	54.9	
10	19.3	31.2	
9.8	20.3	5.2	
10	26.4	49.9	
9.5	28.5	44.6	
10	40.5	54.4	
9.3	49.7	3.6	
9.0	33 2.2	0.5	
9.5	5.4	49.5	
10	20.1	10.0	
9.4	23.9	41.1	
8.6	34.0	45.9	Sj
9.8	57.6	42.4	
9.1	34 15.9	28.5	
9.0	41.6	27.0	
9.0	54.4	37.7	
9.3	35 4.4	28.4	
10	20.5	28.5	
7.0	31.5	43.0	K
10	51.1	41.4	
8.5	36 1.3	6.8	
9.6	5.9	58.1	
9.1	11.1	47.7	
9.4	23.7	52.8	
10	34.4	12.8	
9.2	36.4	22.3	
9.1	40.0	14.4	
9.2	40.3	22.9	
9.0	54.8	21.6	
9.0	37 33.1	42.6	
9.8	39.8	48.4	
9.8	48.8	17.8	
10	38 6.5	38.6	
8.7	7.9	20.4	K
10	31.5	32.9	
9.7	53.4	19.2	
8.9	39 0.7	15.3	
8.3	11.9	22.1	K
9.3	41.0	5.6	

161—220

	0h	−10°	
m	m s	′	
8.6	39 45.2	44.6	Sj
9.7	54.2	46.4	
9.8	40 3.5	26.3	
7.8	37.3	8.8	K
9.9	53.3	20.6	
9.4	41 58.9	18.4	
9.6	42 26.5	27.2	
9.9	37.8	17.4	
8.9	57.6	41.9	
9.5	43 1.6	13.5	
9.8	41.7	40.4	
9.4	47.2	37.7	
6.5	44 2.0	11.6	Sj
9.2	15.3	4.4	
9.4	38.8	42.0	
9.6	44.4	10.1	
9.5	47.8	53.5	
7.7	54.7	37.7	K
9.8	45 33.0	16.0	
8.7	42.7	4.0	K
8.9	49.1	51.7	
9.7	46 11.8	36.5	
8.6	42.7	6.5	Sj
10	57.2	59.7	
10	47 5.5	11.9	
9.7	14.6	2.4	
9.4	26.8	33.6	
9.8	46.2	30.3	
9.5	48 29.6	20.0	
9.0	45.2	25.1	R
8.9	58.0	36.1	
9.1	49 3.7	28.8	
9.7	22.1	13.0	
10	49.9	12.0	
9.3	50 8.7	17.3	
9.8	16.6	28.9	
9.8	20.2	20.4	
9.5	33.0	4.4	
9.0	42.1	36.6	R
10	51 3.5	43.2	
10	22.5	49.0	
10	32.6	48.7	
9.1	40.9	39.5	
9.0	43.1	7.4	
9.5	52 1.6	53.6	
9.5	24.2	20.7	
9.7	34.3	53.5	
9.7	56.9	45.5	
7.0	53 33.2	9.0	Sj
9.7	54.3	40.5	
10	54 6.1	26.3	
8.6	12.0	12.4	K
9.8	20.4	42.9	
9.2	25.3	42.8	R
9.5	35.1	33.7	
9.5	41.8	39.5	
10	50.6	52.8	
9.5	55 15.0	51.5	
9.8	37.5	51.8	
8.4	41.3	38.1	K

221—280

	0h—1h	−10°	
m	m s	′	
10	55 47.4	34.0	
9.7	49.0	3.6	
9.7	51.3	26.9	
9.6	56 39.7	27.8	
9.7	45.8	22.7	
8.8	57 28.5	50.1	K
9.1	53.9	34.8	
9.5	58 5.9	16.1	
6.5	21.5	45.5	K
6.0	49.4	36.9	K
9.1	59 4.5	41.9	
8.2	11.3	32.1	K
9.1	14.2	52.0	
9.5	17.9	27.4	
9.2	32.4	38.6	
9.5	0 1.6	34.8	
9.4	24.2	22.0	
6.5	28.9	33.6	K
9.5	1 5.6	54.9	
3.5	18.3	56.6	K
9.4	19.7	47.7	
9.0	37.9	13.7	
8.2	47.2	52.1	K
9.7	2 22.7	44.5	
9.7	25.6	48.1	
9.7	39.7	16.7	
9.0	3 6.8	27.5	
9.0	49.6	42.5	
9.1	4 8.7	15.9	
10	26.5	38.6	
10	27.1	46.6	
10	48.3	1.5	
10	51.4	33.6	
10	5 15.0	51.3	
9.1	6 2.5	7.6	
10	5.5	44.1	
9.3	8.3	12.6	
10	15.5	48.6	
8.8	53.2	34.3	
7.8	7 25.0	44.3	K
9.6	39.6	49.2	
9.7	8 10.5	50.5	
8.2	32.3	33.3	K
9.5	45.3	15.7	
9.5	57.5	35.1	
9.5	9 20.9	18.1	
9.3	25.7	56.4	
9.8	33.9	47.1	
9.8	49.0	5.0	
8.7	59.9	57.3	K
8.7	10 0.9	43.9	Sj
8.9	17.4	10.6	
10	18.6	19.6	
9.0	21.9	6.9	
9.3	42.1	54.0	
9.1	43.7	25.4	
9.0	44.4	42.4	K
10	11 36.4	42.8	
8.4	56.0	8.8	
9.1	12 5.4	34.0	

281—340

	1h	−10°	
m	m s	′	
9.8	12 10.6	23.8	
9.7	18.5	37.1	
10	23.7	43.1	
8.7	37.9	44.6	Sj
9.5	41.2	23.9	
7.2	49.0	38.6	K
9.2	53.2	4.5	
8.8	13 3.3	30.6	
9.3	34.8	29.0	
9.8	14 0.1	48.6	
9.7	15.2	53.1	
10	16.0	18.7	
9.0	26.3	26.1	
9.1	41.7	13.4	
8.7	45.0	13.0	
9.0	15 26.7	20.9	
9.8	59.1	13.5	
9.0	16 30.8	41.2	
8.3	49.9	34.0	Sj
9.8	17 6.7	31.0	
10	20.5	39.4	
9.5	25.2	27.4	
9.8	43.8	22.5	
9.8	58.0	52.0	
9.3	18 14.3	10.3	
10	36.6	40.2	
9.3	39.8	53.9	
9.2	19 41.4	3.9	
7.2	20 14.6	2.7	K
9.5	25.0	28.1	
8.5	51.3	47.5	K
9.1	55.1	1.8	
9.3	59.3	57.2	
9.8	21 9.4	19.3	
9.0	16.5	33.1	
7.2	22 19.2	14.5	K
9.8	25.2	31.5	
9.5	30.5	24.3	
9.2	42.7	40.0	
10	54.1	15.1	
10	23 49.8	38.6	
9.9	51.1	43.5	
9.5	55.0	56.5	
8.0	57.8	3.4	K
8.4	24 8.3	18.1	Sj
8.0	18.1	26.8	K
9.9	58.9	24.2	
8.8	25 12.2	15.2	
9.8	47.0	27.7	
9.1	26 22.0	15.6	
9.5	26.4	8.1	
9.3	44.7	19.9	
9.8	46.0	10.8	
9.8	49.9	21.6	
9.5	27 44.4	3.9	
10	52.5	53.1	
9.4	28 27.9	19.8	
9.6	29 5.9	17.1	
9.6	12.5	45.7	
9.9	23.9	14.8	

341—400

	1h	−10°	
m	m s	′	
10	29 47.7	55.7	
9.8	30 22.1	29.7	
6.3	22.5	8.4	Sj
9.0	43.4	20.9	
10	52.6	55.5	
9.3	31 24.3	37.5	
8.8	35.7	57.8	K
9.1	32 36.3	30.0	
7.8	41.8	42.7	K
9.4	33 0.6	47.9	
9.4	5.1	27.6	
9.5	8.7	37.9	
10	22.3	41.7	
10	23.7	51.0	
9.0	27.4	34.1	Sj
10	51.8	51.5	
8.6	58.3	42.1	K
9.0	34 6.4	6.1	
9.4	39.6	5.7	
9.8	44.3	14.5	
9.5	35 17.0	20.5	
9.3	37.3	15.2	
9.9	44.2	21.9	
10	36 19.8	14.4	
10	27.4	32.3	
9.5	37 16.3	49.1	
8.8	21.7	20.4	
9.6	48.5	48.6	
9.5	38 9.6	6.1	
9.0	39.1	3.9	
9.9	39 11.6	14.8	
9.4	31.5	17.2	
9.2	44.3	45.9	
9.5	46.0	28.7	
9.4	50.8	44.8	
8.3	55.7	19.4	Sj
9.0	40 4.5	32.4	
8.7	14.6	13.2	K
9.5	41 2.8	13.0	
10	9.7	34.0	
9.5	11.9	47.5	
9.1	39.3	24.2	
9.8	42 1.0	16.4	
9.8	19.5	27.8	
9.5	56.7	42.9	
9.4	59.1	57.5	
9.5	43 9.4	18.5	
9.2	20.2	4.5	
9.0	44 35.2	30.4	
9.1	36.9	38.7	
8.5	53.8	17.9	K
8.0	45 6.3	27.0	K
9.5	28.0	14.5	
9.5	58.9	56.0	
9.5	46 52.0	35.6	
9.9	53.8	3.7	
9.6	55.3	10.3	
9.8	47 6.6	14.0	
7.8	48 3.9	32.5	K
10	6.2	13.4	

401—460				461—520				521—580				581—640				641—700			
	1h—2h		—10°		2h		—10°		2h		—10°		2h—3h		—10°		3h		—10°
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.6	49	0.1	3.2	9.1	8	57.0	33.3	8.8	32	4.1	9.6	9.0	50	26.7	51.8	9.6	7	27.3	19.7
9.8		19.2	10.9	7.5	9	6.9	29.5 K	6.8		5.9	27.3	9.7		27.5	14.9	7.5		32.0	13.9 K
6.7	50	4.4	56.0 Sj	9.2		56.5	57.2	9.4		23.8	26.9	9.1	51	34.0	33.0	10	8	6.3	55.4
9.5		28.5	18.0	9.4	10	46.9	55.9	9.2		41.1	12.8	9.4		39.2	46.1	9.3		50.0	11.9
9.8		30.9	1.7	9.8	11	5.1	34.8	6.2	33	8.5	4.5 Sj	6.5		45.8	21.4 K	10	9	13.6	14.0
9.8		40.7	41.0	9.4		17.2	45.3	9.2		24.4	36.7	8.3	52	26.7	51.2 K	9.5		29.0	5.9
9.1		41.0	5.0	10		29.0	55.3	9.1		31.8	13.5	9.5		28.4	22.3	9.9		49.5	29.4
9.5	51	8.9	12.6	10		34.2	44.4	9.8		40.0	3.1	9.4		33.5	48.8	9.0	10	40.1	29.6
9.2		31.0	28.8	10		52.5	4.5	9.8	34	0.0	55.9	9.9		54.3	59.4	7.2	11	0.6	58.4 K
9.7		44.1	31.4	9.4	12	17.8	21.7	8.8		11.8	23.0	9.7	53	25.3	14.9	8.0		20.1	15.7 Sj
9.8		48.8	28.3	9.5		20.6	53.9	9.8		16.9	24.4	8.2		53.9	36.6 K	10		25.9	55.5
8.5	52	0.1	53.3 K	9.5		48.1	6.1	9.9		18.1	19.8	9.0	54	15.9	54.4 K	9.3		35.3	46.8
8.1		9.4	17.0	9.8	13	29.5	53.3	9.5	35	40.3	48.1	9.0		52.2	45.8	9.3	12	4.0	1.0 K
9.5		32.6	33.2	9.5		43.9	24.1	10		51.0	1.5	6.0		54.9	31.9 K	9.7		14.5	8.2
9.7		43.3	13.0	9.5		49.7	42.4	10	36	4.1	42.5	10	55	31.6	10.9	9.4	13	15.4	22.9
9.5		53.0	3.4	10	14	9.5	2.9	9.4		9.3	18.4	9.4		36.9	1.1	9.2		32.1	6.2
9.0	53	38.8	18.0 Sj	9.5		15.0	17.7	9.4		9.7	21.2	9.3		40.7	6.0	9.0		49.8	52.0 K
9.0		48.1	7.0	9.3		22.6	3.8	9.8		27.6	50.5	9.4	56	21.4	39.6	9.6	14	3.3	45.5
9.5		53.1	50.6	8.5		43.1	3.3 K	9.5		30.2	35.4	9.4		33.5	53.2	9.0		41.2	20.4 Sj
9.5	54	9.6	10.5	9.9		50.5	43.4	9.8		37.2	31.3	10		53.2	33.1	9.3	15	1.4	46.2
8.8		42.5	27.4 K	9.4		51.0	47.9	9.4	37	31.2	5.7	9.0	57	23.7	25.3	8.8		1.6	10.4 K
9.3	55	57.3	37.6	8.6	15	37.2	51.7 K	9.1	38	20.1	28.1	8.5		47.0	44.4	10		54.6	25.0
10	56	22.0	2.5	9.4		50.0	24.5	9.5		25.9	56.4	9.1		59.2	0.6	9.0	16	2.2	6.4
7.5		26.7	9.6 K	9.5	16	4.8	20.3	9.1	39	15.8	16.9	10	58	38.8	8.4	9.9		13.3	48.6
9.3		35.5	54.3	9.9		20.1	1.1	9.5		24.9	46.9	9.9		58.8	32.0	8.8		23.4	45.7 K
9.8		58.6	48.9	9.4	17	8.5	27.6	9.0		27.6	25.2	9.6	59	7.3	55.4	9.3		37.8	44.0
8.9	57	59.6	3.3	8.1		56.7	51.3 K	9.1		30.4	45.7	9.5		9.0	0.6	10		40.6	1.6
9.0	58	14.7	29.1	8.3	18	7.1	15.8 L	9.5		53.9	44.4	9.9		13.2	23.0	10		52.9	12.9
8.8		58.2	54.3 K	9.4		35.2	20.7	8.9		57.1	28.3	9.9		18.5	50.7	10		56.5	54.0
7.0	59	3.6	57.9 K	10		39.4	12.2	9.2	40	3.9	10.6	7.0		33.0	48.5 K	10	17	15.1	32.8
8.5		18.4	41.2 K	8.3		48.8	33.8 L	9.7		24.6	13.3	9.3		34.9	17.5	9.3		39.1	3.8
9.0		35.1	47.8 K	8.8	19	26.1	16.2	9.1		26.2	5.5	10	0	7.3	34.1	9.0		42.6	56.0 K
9.2		50.6	58.3	9.3		48.5	39.4	9.4		50.8	15.1	9.4		9.7	24.6	9.4	18	20.1	3.2
9.3	0	37.0	42.8	9.8	20	20.7	48.5	9.8	41	7.5	49.7	10		24.6	59.4	9.5		39.7	30.0
8.8		48.8	33.2 K	8.3		38.0	27.2 K	10		10.6	21.2	9.6		38.3	18.1	9.8		57.0	54.2
9.9		58.5	22.5	9.0	21	12.2	3.3	10	42	18.6	53.3	10		40.0	41.3	9.5	19	1.9	15.5
7.0	1	12.1	44.0 K	8.5		30.1	22.5 K	9.4		31.7	1.0	9.8	1	3.6	52.5	9.2		2.3	47.2
9.1		34.2	46.6 K	8.8		33.5	14.9 K	8.0		33.3	8.1 K	9.0		16.4	46.2	10		5.4	6.1
9.1	2	18.9	52.4	9.5	22	2.8	28.9	9.3		40.1	19.2	10		24.6	14.9	8.4		44.9	1.7 K
8.5		24.3	33.5	10		5.9	8.5	9.8		49.4	36.5	8.0		26.1	6.3 Sj	9.6	20	6.7	23.8
8.7		30.1	19.9	9.5		6.4	53.4	9.2	43	4.3	52.8	9.3		29.7	54.1	9.3	21	24.2	1.6
10		37.1	2.6	9.5		38.9	8.7	9.3		4.6	58.0	9.5		49.6	6.1	9.7		45.0	45.2
10	3	18.2	1.0	8.5		40.8	3.1 K	9.9		13.2	5.9	9.5	2	10.0	37.9	8.3		50.4	40.7 Sj
9.5		23.6	42.4	9.1	23	39.7	3.6	9.5		16.8	33.9	9.9		15.6	27.7	9.2		51.3	9.0
9.5		38.7	28.7	9.9		52.3	5.9	9.7		56.9	55.9	9.1		33.1	46.1 K	9.3	22	2.1	52.9
9.5	4	12.7	1.5	9.5	24	32.5	46.5	8.8	44	3.1	51.2	8.3		40.0	7.5 K	10		2.2	25.2
6.5		15.6	44.1 B	9.1	26	3.2	59.5	9.8		20.8	31.0	9.5		48.2	21.1	9.1		3.3	52.3
9.8	5	21.9	16.9	9.4		30.9	5.0	9.3	45	10.7	59.1	10		55.3	59.9	9.4		35.7	17.6
9.3		31.5	36.1	9.2		40.5	14.5	6.5		46.2	2.5 Sj	9.8	3	1.0	13.0	10	23	0.6	54.5
9.2		44.2	21.4	10		43.7	21.1	9.8	46	9.3	33.5	9.4		7.0	15.8	9.4		33.7	2.6
9.5		52.1	17.3	9.5	27	31.2	42.8	9.5		12.5	43.2	9.5		17.0	38.3	6.8		41.0	13.9 K
9.5	6	21.7	6.2	8.0		58.3	31.4 K	9.1		41.8	14.8	10		42.7	4.8	9.8	24	40.5	43.7
8.3		25.3	25.6 K	8.0	28	1.4	4.8 K	10	47	3.4	33.8	9.1	4	52.1	59.4	9.7		58.6	21.1
9.1		34.4	50.5 K	9.2		7.9	3.4	10		5.2	13.6	9.3	5	2.4	36.8	8.0	26	14.3	32.3 L
8.5		36.3	45.1 K	9.5	29	0.2	44.4	9.8		37.3	31.5	9.4		8.6	12.1	9.2		17.9	11.2
9.5	7	24.7	17.5	9.5		11.3	53.5	10	48	0.9	6.8	10	6	0.9	29.6	8.6		18.3	33.6
9.6		26.8	57.6	9.8		54.2	49.4	8.3		47.3	1.7 R	10		9.3	4.3	9.1		30.2	20.9
9.4		55.9	18.3	8.9	30	1.4	3.9	9.8	49	16.9	12.6	8.1		22.5	32.4 K	10		30.7	0.3
10		59.2	1.4	9.4		43.3	31.4	9.5		49.9	30.0	9.9		41.1	59.3	9.4		36.8	5.0
7.0	8	20.4	8.5 K	9.9	31	23.2	15.5	8.2		53.8	57.7 K	9.0	7	23.1	45.4	9.3		52.9	8.1

403: 4h52 56′38″.1 B_4, Ep. 1872.29

701—760				761—820				821—880				881—940				941—1000			
	3h		—10°		3h		—10°		3h—4h		—10°		4h		—10°		4h		—10°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.5	26	57.4	41.9	9.4	44	35.1	5.0	9.8	55	23.0	38.0	10	9	39.1	52.8	9.8	25	12.2	47.1	
9.2	27	14.8	31.9	9.5		36.9	43.2	9.6	56	7.4	28.8	7.5		41.5	27.1	Sj	9.0		18.9	53.6	Sj
9.9		22.6	53.[illegible]	8.3		59.1	57.9	Sj	8.2		30.7	57.8	Sj	9.8	10	40.9	45.4		8.5		23.1	14.3	K
6.5		39.3	21.[illegible]	Sj	9.8	45	44.9	44.3	9.4	57	14.8	17.2		9.1		47.8	20.3	K	9.5		23.4	48.4	
9.0		50.8	23.6	K	10		54.8	37.8	10		19.3	30.0		9.3		51.6	28.1		9.5		2[illegible].0	33.7	
9.1	28	1[illegible].0	3.8		9.9		57.0	13.2	9.5		20.1	26.5		9.5	11	21.4	30.7		9.5		31.5	9.7	
10		22.4	30.0		9.3	46	3.7	1.3	9.5		24.2	11.7		9.1		34.5	48.6		9.8		32.4	2.1	
8.6		58.5	40.5		9.8		12.7	5.3	9.2		25.9	49.6	K	9.6		46.1	52.0		9.3		53.2	46.5	
9.4	29	6.2	18.2		9.6		17.4	9.6	9.5		26.0	54.5		9.2		57.1	40.0	K	9.1		59.6	39.4	
9.2		19.8	2.6		9.5		23.5	24.5	10		26.9	31.5		10	12	17.5	46.0		10	26	5.0	35.6	
10		42.8	31.6		7.8		29.4	58.7	Sj	8.0		30.5	38.1	Sj	9.0		24.3	6.3	K	8.9		9.8	8.7	
9.8	30	9.1	49.9		9.5	47	19.9	42.6		10		58.0	32.3		8.4		42.0	56.1	Sj	9.4		29.5	32.8	
8.8		29.9	8.9	K	9.5		20.3	19.1		10	58	27.2	45.3		9.4		47.1	58.5		9.5		48.1	24.7	
9.9	31	8.6	41.1		8.5		20.8	51.5	K	6.8		59.1	41.9	L	10		53.0	16.2		9.6	27	5.2	42.2	
10		20.4	0.8		9.5		24.4	44.0		9.8	59	13.3	37.2		8.5	13	20.6	51.1	K	9.6		8.5	34.1	
9.3		56.9	27.0		9.3		26.7	23.9		9.1		38.5	31.4		9.5		31.7	31.[illegible]		9.8		19.1	5.6	
6.1	32	29.6	54.6	Sj	9.3		48.4	7.7		9.9		58.9	27.1		10		56.2	15.2		8.9		42.4	53.7	
9.3		31.7	45.3		9.1	48	13.3	36.4		9.7	0	4.8	11.1		9.8	14	5.2	31.6		8.2	28	18.4	2.3	K
9.4		59.7	49.8		9.4		17.8	0.2		6.7		6.9	23.2	Sj	9.7		16.5	22.7		7.3		19.2	2.3	K
9.4	33	13.1	45.5		9.8		21.3	34.2		9.7		8.0	34.1		9.5		20.1	46.5		9.8		48.2	36.1	
10		23.4	8.7		9.4		31.8	36.0		7.2		19.8	9.1	K	10	15	6.0	45.2		9.8		48.4	21.1	
10	34	18.5	56.0		9.9		38.9	37.5		9.1		31.9	26.6	K	8.0		9.1	17.7	K	10		59.3	1.6	
9.8	35	9.0	8.7		8.3		42.5	58.1	Sj	9.3		33.7	9.1		8.3		18.8	36.9	Sj	9.3	29	1.7	29.8	
8.8		13.3	17.9	K	9.8		47.0	43.4		9.0		46.0	30.3	K	9.3		19.6	25.1		10		9.6	47.2	
9.1		16.9	12.1	K	9.0	49	4.7	24.4		9.8		55.8	16.8		8.8		37.0	23.3	K	9.1		32.5	17.1	K
9.4		20.1	34.7		9.1		6.4	45.5	K	9.7	1	9.5	4.8		10	16	39.0	11.9		8.9		36.3	32.2	
8.8		51.4	58.5		8.5		14.0	15.4	K	9.1		59.0	0.9		9.0		49.4	30.9	K	8.3	30	4.6	11.4	K
3.3	36	17.9	15.0	K	9.6		34.1	18.6		9.8	2	2.4	59.8		9.2	17	5.5	42.0		8.6		31.9	8.9	K
6.0		38.3	56.7	K	9.3		36.9	40.4	K	9.2		32.7	45.0		9.9		18.2	1.1		9.8		41.7	46.6	
7.7		46.7	4.0	Sj	9.5		38.4	41.9		9.7		33.9	55.0		9.7		41.2	28.4		9.5	31	17.5	15.8	
9.4		47.8	55.7		9.2		38.6	5.4		9.0		34.0	31.1		9.5	18	2.1	45.7		9.1		25.8	16.8	
9.8		59.7	50.2		9.4		39.0	6.1		10		52.3	20.4		8.7		8.3	43.3	Sj	9.0		37.0	30.0	K
9.3	37	4.4	3.1		6.5		40.6	10.5	K	9.5		55.2	33.0		9.5		14.1	7.2		9.0	32	4.9	58.9	K
9.5		4.7	14.8		9.2	50	9.0	14.9		9.0		57.1	4.2	K	9.3		14.2	10.3		9.8		31.7	50.2	
9.2		14.1	32.4		9.2		12.1	52.6		9.0	3	15.6	33.4	Sj	9.6		38.1	21.7		9.4		36.4	37.4	
8.0		47.7	42.2	K	8.0		40.9	6.8	K	9.2	4	36.9	12.0	K	8.5		47.3	55.2	K	10		37.6	17.2	
9.3		50.9	3[illegible].6		9.1		47.4	40.8		9.7		43.1	27.0		6.8		48.3	15.7	K	8.4		56.2	59.2	K
9.3		57.2	49.4		9.8	51	0.3	16.5		8.6	5	16.4	50.7	K	9.8	19	27.8	28.5		9.2		56.8	27.3	
8.9	38	41.7	45.0		9.2		3.9	39.0		10		27.3	48.9		7.8		33.2	52.4	K	9.5	33	25.5	14.7	
9.8		58.0	5.5		9.4		4.6	35.4		8.3		40.0	56.7	K	9.8		49.9	16.4		8.8		40.1	55.4	Sj
7.0	39	15.7	19.9	L	9.7		14.0	40.8		9.8		50.6	0.3		9.5	20	5.3	32.5		9.0		40.6	42.2	
9.8		25.1	30.4		9.7		22.5	37.2		9.5		52.6	32.8		9.1		49.1	15.3	K	8.8		54.7	47.8	K
8.5		37.3	10.5	Sj	9.7		44.4	28.5		7.7	6	35.5	45.2	Sj	9.8	21	2.7	50.0		9.0		59.2	21.2	K
9.6		56.8	50.7		10		45.2	3.9		9.3		57.3	15.8		9.1		3.8	0.7		10	34	6.1	14.2	
9.4	40	13.4	8.9		10		47.0	21.4		9.8	7	13.6	2.1		8.4		38.7	51.6	Sj	9.3		8.3	28.5	
10		38.9	51.5		9.5		57.8	23.2		10		24.5	20.7		8.3	22	0.5	20.9	Sj	9.7		49.4	5.9	
10		49.6	46.4		9.0	52	28.3	23.8	K	4.8		30.0	37.4	Sj	8.8		28.7	48.0	K	10	35	14.0	7.6	
9.7	41	9.8	40.0		8.2		42.2	44.1	K	10		32.3	22.5		9.2		38.1	31.6		10		19.1	34.7	
9.7		30.2	37.8		9.0		49.6	54.0		9.9		33.7	40.0		9.7		40.8	55.3		10		20.9	8.7	
9.4		43.4	10.3		9.5	53	36.5	37.6		9.8		34.9	44.0		9.7		45.7	22.0		10		22.3	34.0	
9.7		51.0	2.9		10		50.5	40.5		9.6		53.6	26.6		9.9	23	4.4	32.9		9.4	36	23.3	28.2	
9.7	42	2.0	10.8		10		53.8	18.3		8.1		55.2	56.6	K	9.3		20.3	29.1		9.5		50.1	37.6	
9.9		29.0	16.1		8.7	54	0.6	51.5	K	9.2		57.4	42.7		8.7		36.1	14.2	K	8.0		54.7	57.5	Sj
9.5		35.9	48.1		9.0		0.7	5[illegible].3	K	9.1	8	6.1	1.9	K	9.9		53.1	57.4		8.5		57.9	24.7	
10	43	4.1	16.7		9.5		30.7	52.0		9.0		9.0	1.2	K	10	24	3.9	7.6		9.6		58.4	5.0	
9.7		19.7	6.5	B	9.8		33.9	33.3		9.5		34.1	2.6		9.8		14.2	27.3		9.2	37	5.0	54.1	
8.2		29.8	45.7	Sj	9.3	55	4.4	26.3		9.3		51.6	28.9		9.0		39.8	26.3	K	9.6		10.3	59.1	
9.9		54.6	34.5		9.0		8.2	53.5	K	8.3		58.0	19.5		9.7		43.9	19.3		9.0		13.0	20.2	
8.2	44	5.4	10.4	K	9.0		17.4	30.4		10	9	7.6	53.4		9.5		56.1	11.5		8.5		31.6	12.9	
9.5		28.2	10.2		9.5		22.5	22.2		9.6		20.2	15.6		9.2	25	4.5	6.9		9.4		33.3	31.1	

1001—1060				1061—1120				1121—1180				1181—1240				1241—1300			
	4h		—10°		4h—5h		—10°		5h		—10°		5h		—10°		5h		—10°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.9	37	53.9	55.0	9.1	52	17.4	24.3	9.4	4	55.0	44.8	9.7	18	28.1	0.0	9.0	31	3.5	10.7	K
9.1	38	7.8	9.7	9.8		27.7	27.9	10	5	1.6	44.8	10		44.9	20.6	9.8		17.2	54.3	
9.8		16.4	52.5	8.0		34.9	34.5	K 9.8		17.2	44.6	10		52.9	10.2	9.3		34.4	52.2	M
9.6		29.4	3.3	9.8		35.8	56.2	9.5		35.9	44.1	10	19	0.0	20.4	9.5		39.9	29.4	
10		41.9	56.2	8.8		46.9	32.5	K 9.0	6	31.0	48.5	K 8.5		1.6	24.9	L 10		46.3	49.0	
8.7	39	18.9	29.7	5.5		58.7	28.7	K 9.3		41.7	49.4	8.0		15.3	53.0	9.4	32	7.3	59.4	
9.1		22.6	6.8	9.5	53	5.0	59.7	10		44.2	35.6	10		28.1	42.3	9.5		9.4	52.2	
9.5		35.2	16.2	9.2		14.6	35.1	9.5		57.4	17.4	10		28.7	18.8	9.5		22.8	23.6	
9.5		50.8	15.8	9.1		17.8	55.8	9.0	7	7.7	33.5	10		33.3	6.1	10		37.8	21.7	
9.5		53.0	42.7	9.4		36.8	4.4	9.5		27.5	22.6	10	20	10.6	20.4	9.2		43.5	39.6	
9.3	40	27.5	24.0	8.8	54	18.8	4.9	7.5		37.7	35.5	9.5		24.0	44.1	9.2		54.8	24.0	
9.0		29.9	45.2	9.5		23.2	13.5	9.7		57.6	30.2	8.5		28.2	49.2	K 9.2	33	8.8	0.2	K
8.9		56.4	58.1	8.0		38.3	51.9	B 9.7		57.9	20.4	9.0		37.3	5.2	9.5		11.8	19.9	
9.3	41	4.8	41.3	9.9		40.5	40.1	9.5	8	6.2	11.1	8.8		58.6	17.3	K 9.5		16.3	49.4	K
9.2		11.0	47.5	9.5	55	6.5	14.5	9.2		11.2	8.4	9.7	21	9.4	7.6	8.5		41.0	31.0	K
8.4		12.2	51.1	9.3		56.6	41.8	9.5		15.3	12.1	8.8		42.0	36.8	K 9.0		42.7	16.7	
9.5		14.4	10.3	9.8	56	18.6	41.4	9.4		39.9	11.1	10		59.3	50.6	9.0		49.9	27.0	K
9.8		57.3	25.2	10		36.4	9.0	10		51.8	8.2	10	22	10.9	33.6	7.0		55.9	29.2	K
9.0	42	28.5	50.0	K 9.5		52.8	45.9	9.0		57.3	30.8	9.3		19.2	48.8	9.7		59.5	58.9	
9.3		29.4	43.1	9.2		56.9	35.6	9.0	9	18.6	24.8	K 9.5		42.6	16.3	9.3	34	0.2	43.0	
9.0		35.1	51.3	K 9.3		58.4	47.0	9.5		37.1	58.3	10		58.6	18.1	9.5		34.8	23.9	
10		37.5	35.5	9.5	57	2.5	28.7	10	10	28.1	1.1	8.4		58.8	2.9	K 9.3		40.9	29.3	
9.5		57.2	8.8	7.5		9.2	50.8	K 9.5		30.8	33.7	9.0	23	23.7	22.1	9.5		51.3	47.6	
8.9	43	19.1	31.6	9.9		16.3	2.0	9.0		54.1	50.7	7.0	24	7.5	11.3	K 10	35	6.5	12.3	
9.5		35.2	4.4	9.2		30.0	20.9	9.5	11	6.9	40.4	9.5		14.0	56.1	7.3		44.6	42.0	K
8.3	44	14.5	1.5	L 8.6		36.6	44.8	9.3		29.8	8.7	9.8		23.1	17.5	8.9		46.1	26.7	K
9.3		40.3	40.6	8.5	58	0.5	43.5	9.5		42.9	46.9	9.5		26.0	35.4	9.7		54.2	29.1	
7.2		47.7	32.3	K 9.8		12.5	11.7	9.6		47.1	51.4	9.4		38.5	12.6	9.4	36	2.8	33.4	
9.5		57.4	43.0	9.5		36.0	57.1	8.4		50.8	40.4	K 9.0		51.0	39.8	9.0		28.7	47.1	
9.7	45	2.6	29.4	8.5		37.1	1.6	K 8.5	12	8.4	14.9	K 8.5	25	9.4	6.8	K 10	37	7.3	58.0	
9.6		37.6	30.2	9.3		48.6	43.9	9.5		27.7	29.2	9.5		19.0	38.1	7.0		26.3	4.8	K
7.8		43.4	44.1	K 9.5		58.8	5.9	8.5		31.2	54.2	K 9.5		31.9	33.7	9.3	38	21.7	2.2	K
9.2		51.5	46.6	8.8	59	7.4	19.3	K 8.5		32.2	54.2	K 10		36.5	11.8	9.0		36.2	57.4	
9.9	46	19.4	53.8	9.2		10.3	29.8	9.3	13	5.4	14.3	9.0		58.9	32.2	8.0		42.1	49.5	K
9.6		31.6	55.5	9.0		20.6	5.9	9.1		9.3	58.1	8.0	26	13.0	35.3	9.0	39	8.9	44.5	M
9.1		44.0	4.6	7.9		20.8	37.2	K 8.8		12.3	9.0	K 9.5		22.2	1.0	10		29.8	7.3	
9.8		46.2	18.8	9.3		23.6	38.0	9.7		18.9	36.3	9.3		38.3	22.8	9.3		34.2	58.0	
9.1		57.6	52.9	K 9.6		49.6	36.0	9.5		20.8	34.1	9.3		53.7	57.5	9.0		54.1	54.0	K
9.6	47	7.3	8.6	8.8		57.1	3.2	K 8.7		49.9	40.8	K 10	27	21.2	49.6	8.0	40	17.8	40.4	L
9.1		40.8	57.5	K 9.5	0	40.1	54.5	9.3	14	7.1	50.5	10		21.7	46.9	9.5		33.6	2.5	
9.4		47.1	48.3	8.5		52.1	3.6	9.0		14.2	30.4	8.6		28.4	9.4	K 6.5		37.7	35.5	L
8.8		50.2	1.5	9.5	1	15.7	41.1	9.5		26.0	43.4	9.0		30.7	22.3	K 9.3		58.9	39.1	
8.8		57.4	50.7	9.5		23.8	38.5	9.0		43.4	11.7	10		32.9	9.0	9.3	41	11.1	14.5	
9.4	48	1.7	3.4	9.0		40.0	48.3	9.3		44.3	9.0	7.5		38.0	36.6	K 9.3		39.7	35.5	
10		24.6	1.2	9.4		50.0	0.6	9.5	15	26.9	40.2	9.2		41.2	46.0	8.5		52.3	19.0	K
9.1		33.9	38.9	9.3	2	8.6	28.1	9.4		49.1	58.7	9.5		48.0	11.3	9.0	42	2.0	12.3	K
8.7		37.5	18.3	10		17.6	27.6	10		52.4	5.0	9.7		54.8	58.7	9.5		13.0	48.4	
10		42.4	51.3	9.2	3	0.4	41.9	9.0		53.5	37.8	8.5		59.7	0.5	L 9.7		22.6	53.7	
10		55.2	12.8	9.5		17.0	35.8	8.9		54.5	42.4	9.7	28	30.6	17.9	9.0		25.3	21.2	K
8.9	49	12.5	23.6	9.5		23.9	46.1	9.4		57.6	50.9	9.0		47.5	13.8	10	43	5.3	0.2	
9.3		26.4	1.0	9.5		39.3	12.6	9.6	16	6.9	38.6	9.0		51.5	39.7	M 10		9.0	34.5	
9.7		45.2	18.6	9.4		45.2	8.1	9.3		15.5	54.5	9.3	29	4.3	3.1	9.4		14.8	7.1	
9.0		56.7	4.7	9.2		47.9	18.3	9.0		35.0	44.6	10		19.9	26.3	9.3		22.9	59.9	
9.2	50	2.9	38.7	9.4	4	8.3	57.1	8.0		43.8	33.4	K 9.0		36.4	3.5	9.4		36.6	0.9	
9.8		38.1	22.3	10		10.0	37.8	9.0	17	0.3	8.0	8.5		49.1	36.2	K 9.2	44	0.2	15.0	M
9.0		51.9	39.2	9.8		31.0	36.0	9.5		30.5	18.7	9.0		52.8	22.7	10		6.5	27.5	
9.6	51	3.7	40.6	9.0		36.3	11.1	9.3		31.2	29.4	10	30	0.8	22.7	9.4		17.0	10.5	
9.0		18.2	28.7	9.8		43.1	45.9	6.3	18	10.7	28.1	K 9.0		7.5	10.2	K 9.5		21.0	42.2	
9.5		28.1	14.5	8.3		45.1	58.5	9.0		18.2	4.4	10		25.7	18.2	9.5		31.9	2.7	
9.5		46.7	31.2	8.0		45.7	33.8	9.5		28.0	56.8	8.0		45.9	29.4	L 8.8		33.9	3.3	M

1301—1360				1361—1420				1421—1480				1481—1540				1541—1600			
	5h	−10°			5h—6h	−10°			6h	−10°			6h	−10°			6h	−10°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.3	44 52.5	25.9		8.5	57 41.8	2.8	K	10	6 7.0	2.3		7.3	13 28.3	49.2	Sj	9.0	21 44.1	19.3	
9.6	53.1	59.4		10	49.1	29.1		10	15.8	51.2		10	31.4	20.1		9.5	50.0	56.4	
8.0	56.1	28.6		9.4	57.8	39.0		7.8	29.5	36.4	K	8.7	33.0	22.0	L	9.0	52.8	8.2	
9.5	45 0.9	38.0		9.0	58 5.6	34.1		9.0	31.0	17.6		9.2	37.5	23.1		9.1	53.8	15.0	
9.0	5.0	7.2		9.0	12.3	17.1	K	9.9	33.5	56.7		8.6	45.9	1.8		9.2	54.3	33.9	
9.5	46 5.0	40.3		9.2	15.5	59.1		8.7	47.7	46.7	K	9.4	14 5.8	33.6		8.5	22 10.6	15.0	Sj
10	17.0	45.2		9.2	33.0	38.1		9.4	49.1	40.6		9.8	6.2	27.0		8.8	29.4	20.1	
9.0	27.0	42.9		6.2	36.2	13.9	K	9.1	7 1.7	46.5	K	9.0	8.2	29.1		9.1	48.9	51.2	
8.5	37.0	42.9	K	10	56.0	21.2		10	17.3	31.5		9.0	9.3	31.5		9.7	54.6	42.4	
10	40.5	27.3		9.9	59 1.0	39.3		10	19.0	15.0		10	31.7	2.5		9.1	59.3	51.0	
9.5	44.3	2.3		10	3.0	39.3		8.5	29.5	1.8	K	8.5	32.6	27.6	K	9.0	23 9.6	43.7	
9.5	47 5.0	42.5		9.0	5.1	11.6		10	48.4	19.6		9.7	35.4	2.4		8.3	18.5	39.2	L
10	20.1	10.8		10	23.8	34.9		9.8	50.6	33.8		8.5	55.0	3.5	K	9.3	28.1	3.9	
10	21.5	43.8		8.5	25.3	52.3	K	9.0	55.5	11.1	K	10	15 5.1	9.5		9.1	33.7	25.8	
9.5	30.8	0.5		10	48.0	9.8		10	57.9	52.3		9.1	11.6	25.7		8.6	35.8	29.4	K
9.6	48 8.4	9.4		9.5	56.1	28.1		9.7	8 5.8	16.8		9.7	32.8	21.8		9.1	51.4	53.0	
9.6	16.5	1.7		9.0	57.2	15.2	K	9.8	15.4	13.7		9.5	45.4	36.5		8.6	24 22.8	19.1	Sj
9.0	53.8	53.2		10	0 16.5	51.7		9.4	27.0	6.3		9.8	52.2	30.5		10	24.9	23.1	
9.0	49 12.0	7.5	K	9.5	16.8	35.7		10	32.3	58.5		9.0	16 10.6	25.2	K	8.9	32.9	54.9	K
9.2	43.6	38.8		10	33.5	59.3		9.4	32.9	37.0		9.2	15.5	35.9		10	33.2	43.8	
8.0	44.9	39.7	K	9.5	49.0	41.9		9.3	42.2	48.6		8.9	38.8	41.8	M	10	45.6	59.0	
9.1	49.5	43.4		9.3	52.0	38.8		9.6	49.1	59.8		10	39.0	47.4		10	51.6	38.5	
9.0	50 2.0	8.5		9.5	1 4.2	15.2		8.4	56.7	47.5	K	10	53.3	32.2		9.8	55.1	25.0	
10	5.2	51.4		9.7	5.4	21.5		9.0	9 8.2	12.9	K	8.7	17 9.6	37.7	M	9.8	25 1.5	55.8	
7.8	15.3	52.6	K	10	9.9	49.6		8.9	9.1	7.2	K	9.1	11.2	3.7		9.3	1.7	14.7	
9.5	38.0	37.9		7.8	19.7	33.0	K	9.9	33.6	39.8		9.8	31.4	17.3		9.5	9.0	38.3	
9.0	40.2	50.4	K	9.3	20.5	7.3		10	41.7	26.9		9.4	33.8	20.7		10	12.6	37.9	
9.5	49.1	5.6		9.5	23.3	49.4		8.4	58.2	1.2	K	8.7	50.7	28.2		10	39.7	6.3	
9.2	59.6	6.9		8.5	26.5	25.8	K	9.6	59.9	53.7		9.8	56.9	29.1		10	53.8	6.1	
10	51 28.6	30.8		9.5	28.4	34.7		9.1	10 11.4	52.3	K	8.8	18 2.8	20.9		9.3	54.4	51.4	
8.5	32.3	53.6	K	9.0	56.5	58.4		10	20.1	10.6		9.8	12.1	42.3		9.7	26 11.0	53.9	
8.0	43.3	51.8	K	9.5	59.4	22.2		9.0	31.6	40.0	K	8.9	23.0	13.1	M	8.8	12.1	55.4	K
9.1	52 15.6	28.9		9.0	2 15.6	30.7	K	9.6	35.6	11.5		9.4	23.4	13.2		10	29.9	32.4	
9.5	19.3	53.5		8.5	21.0	9.7	K	9.6	41.7	46.0		9.7	26.6	25.0		9.0	42.7	16.2	
9.2	30.1	45.0		9.0	22.6	45.0	K	7.0	45.8	40.0	K	7.8	27.4	52.0	L	9.2	42.8	39.6	
9.4	53.9	56.1		9.5	26.9	6.1		9.5	45.8	5.8		9.1	34.3	33.5		9.4	52.5	18.9	
9.2	53 12.7	33.3		10	33.9	31.2		10	52.3	14.5		9.5	49.1	9.1		9.8	58.8	13.9	
9.8	15.3	19.9		10	39.4	55.8		9.4	58.0	35.9		10	50.7	22.1		9.7	27 2.8	53.9	
9.4	22.6	27.5		9.3	54.4	23.1		9.2	11 4.6	25.6	K	10	56.8	7.5		9.4	6.7	51.4	
10	31.1	30.3		9.5	56.4	3.5		9.4	15.5	56.6		10	19 2.5	23.0		8.8	11.0	37.2	Sj
8.5	50.8	2.0	K	9.0	3 0.1	10.6	M	8.7	16.2	11.1	K	9.3	8.6	4.3		9.8	18.2	59.6	
9.5	51.0	37.7		9.0	27.6	24.9	K	9.5	22.8	55.0		9.4	16.7	47.8		9.6	20.2	43.9	
8.8	53.1	11.3	K	9.7	48.2	11.6		9.1	27.6	8.7		9.5	38.6	42.9		9.1	23.3	51.9	
8.5	54 10.9	3.7	K	9.0	53.2	30.2		9.5	41.8	50.3		9.8	41.7	26.8		9.1	24.6	45.7	
9.0	28.0	41.2		10	4 2.1	39.1		9.4	48.5	20.4		9.5	20 1.8	47.5		9.7	25.0	13.9	
9.3	28.8	1.1		9.5	9.5	20.8		9.5	51.8	10.8		9.7	6.5	20.5		9.7	28.9	6.5	
9.0	32.0	8.3	M	8.5	13.2	44.9	K	8.9	52.9	19.2	K	9.8	9.0	35.9		9.4	31.0	20.7	
9.3	34.9	4.7		9.5	19.2	46.2		9.0	57.6	13.1	K	9.3	12.1	39.2		9.5	31.8	11.5	
5.6	55 1.8	35.9	K	9.8	33.0	38.7		9.8	12 10.2	29.7		9.8	19.2	2.1		9.4	37.6	20.7	
9.5	14.2	16.3		9.4	41.8	35.1		10	13.1	23.5		10	33.7	9.5		10	38.2	47.5	
9.5	23.4	1.7		7.3	50.7	13.0	K	9.5	30.7	48.9		9.8	35.2	47.8		9.6	52.3	16.6	
9.0	25.0	44.0		10	5 10.6	9.6		8.8	44.7	11.4	K	9.2	44.6	40.2		9.4	28 15.5	0.4	
9.6	26.6	1.7		9.0	13.3	50.3	K	9.8	47.7	28.3		9.1	21 7.5	23.1	K	9.4	27.6	10.8	
9.6	45.0	6.9		9.2	27.7	28.9		10	56.2	44.0		9.4	8.6	5.6		9.5	27.9	15.0	
9.0	46.4	25.6		10	35.9	20.1		9.2	13 6.0	40.0		9.4	15.7	33.4		8.6	34.7	28.3	K
10	56 2.4	57.0		7.8	37.6	27.5	K	8.5	9.4	34.6	M	9.2	31.5	2.7		9.5	50.1	7.9	
9.5	12.5	8.2		9.7	40.4	18.7		9.3	13.9	0.4		9.5	36.5	56.9		9.8	55.4	32.2	
9.2	30.0	41.2		9.4	59.8	32.4		9.9	20.0	45.8		9.7	36.9	28.7		8.7	56.0	20.3	K
9.5	57 0.4	21.6		7.5	6 0.3	15.7	L	8.0	25.5	40.0	L	9.8	37.7	26.2		8.5	29 1.4	51.7	K
9.5	6.8	1.5		9.8	5.1	31.1		9.1	26.1	32.4		9.5	41.2	59.1		9.8	2.9	46.0	

1601—1660				1661—1720				1721—1780				1781—1840				1841—1900			
	6h	—10°			6h	—10°			6h	—10°			6h	—10°			6h—7h	—10°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.2	29 5.9	12.6		9.5	36 26.0	9.0		9.7	43 47.3	10.3		9.1	50 43.9	16.1		9.2	56 46.7	18.7	
9.0	23.1	43.2	K	9.0	28.3	55.9		9.0	49.7	40.7		9.9	52.0	40.8		10	50.0	13.7	
9.5	35.5	58.5		8.8	30.7	24.5	M	9.7	53.0	36.1		9.3	54.3	52.2		9.5	50.8	54.6	
9.1	49.3	51.2	K	9.5	38.1	40.7		8.8	57.8	31.0		9.3	57.2	52.9		9.5	57 9.2	17.0	
9.8	30 11.2	57.0		9.1	41.6	10.6	K	10	44 10.1	21.4		9.8	51 4.1	48.1		9.8	11.9	59.7	
8.8	13.2	45.8		9.3	43.7	48.3		9.8	11.9	14.9		7.3	8.4	35.4	K	8.6	17.2	4.0	
10	14.0	14.2		9.2	49.1	19.9		9.3	20.9	39.4		6.5	16.9	7.8	L	9.6	24.3	21.6	
9.2	41.1	46.7	K	9.8	37 16.0	37.2		9.7	23.6	56.2		9.1	28.4	46.0		7.3	33.6	14.4	L
9.5	48.5	7.8		8.3	20.9	51.0		8.0	31.2	56.9	L	8.7	36.3	27.4	K	9.4	48.2	55.5	
9.0	49.0	2.0		9.0	25.1	19.1	K	9.8	38.6	56.7		9.5	38.0	8.7		9.0	58 1.8	18.0	
9.7	55.7	38.1		9.0	25.3	37.8	K	8.9	38.8	31.0		8.9	49.6	54.1		9.8	2.0	14.0	
9.6	58.7	0.7		8.3	29.6	59.2	M	9.5	49.1	45.5		9.3	52 4.1	23.5	M	9.4	14.6	56.6	
9.7	31 4.2	45.1		10	47.7	58.6		9.2	55.7	19.6		8.5	6.0	2.4		9.8	17.1	36.9	
9.8	18.6	24.6		9.0	53.4	30.8		9.4	45 8.6	46.3		9.6	10.4	41.1	K	9.5	18.2	38.2	
9.8	22.5	53.2		9.8	38 18.2	52.9		9.8	19.7	15.4		8.5	16.4	35.5	K	9.5	20.2	57.7	
10	40.3	16.0		10	27.1	2.2		9.1	20.4	34.5		9.3	21.3	31.0		9.1	23.0	53.4	
10	47.6	23.5		9.2	27.4	57.9		9.0	32.3	3.6		10	24.8	15.8		9.1	37.3	36.8	
9.8	48.1	20.4		9.0	30.1	41.5	K	9.3	33.2	5.6		9.6	33.5	17.3		8.8	45.9	12.6	
9.8	55.5	38.0		9.3	42.5	37.7		9.0	36.9	5.6		9.5	37.8	57.5	K	9.3	49.5	56.6	K
9.8	32 3.7	16.9		10	53.9	5.5		9.6	44.5	54.2		9.6	40.0	16.7		9.8	51.6	6.9	
10	13.0	36.0		9.3	54.7	36.4		9.0	45.2	7.1		9.7	42.5	31.8		9.5	57.3	26.3	
9.4	40.9	37.9		9.0	55.3	29.5	K	8.7	50.2	55.7	K	9.3	54.3	57.3	K	7.0	59.6	26.7	L
9.4	43.2	41.0		9.1	39 18.4	8.8		9.0	56.8	16.0		9.5	58.6	38.2		9.3	59 0.8	33.3	
8.8	45.8	45.7		10	24.7	43.1		9.3	46 7.4	8.9		8.9	53 3.6	4.8		9.5	1.4	20.7	
10	46.4	36.0		9.8	30.4	10.7		9.8	19.6	53.5		10	26.0	53.2		9.2	3.1	52.6	K
9.0	50.1	40.9		9.5	38.3	15.8		9.8	30.9	3.0		10	26.0	55.7		9.5	4.6	34.5	
9.4	52.0	27.2		9.2	50.5	19.6		10	48.1	9.6		9.8	31.2	56.9		9.0	6.5	53.7	
9.2	53.0	27.9		9.4	59.9	50.2		9.3	54.2	41.3		9.8	36.8	3.3		9.7	27.0	12.3	
10	53.5	2.4		9.0	40 6.7	1.0	K	10	47 18.7	33.8		9.7	38.2	40.1		9.5	29.4	7.4	
9.7	33 9.1	24.1		9.0	20.0	34.9		9.5	21.1	42.9		9.5	39.5	49.3		9.8	35.7	58.4	
8.4	15.0	11.5	L	10	22.7	15.0		9.2	46.9	20.9		9.5	54 17.5	15.0		8.2	36.2	0.1	K
9.1	17.3	4.7		9.4	24.8	47.9		9.5	49.8	0.4		9.9	25.6	52.1		9.6	52.8	37.6	
9.2	26.0	29.6		9.3	27.9	15.3		9.0	53.3	54.7	K	9.4	29.9	0.1	K	9.3	0 0.4	7.5	
9.4	26.6	48.2		10	29.8	6.0		9.7	48 6.4	45.8		9.3	32.6	4.6	K	10	32.8	2.7	
9.2	36.2	46.0	M	9.3	33.3	51.1		9.3	12.8	23.5		9.2	35.6	31.7		9.8	34.0	20.5	
9.8	41.4	54.5		10	43.6	14.1		7.8	29.8	0.2	K	9.5	47.5	47.2		10	38.3	3.5	
10	46.0	36.8		9.0	45.0	53.1	K	8.8	36.0	35.9		9.4	49.9	26.4		9.3	40.7	55.6	
8.7	53.6	41.5	M	9.4	49.5	52.8		8.3	41.9	2.6	K	7.0	55 0.4	41.1	L	9.8	49.4	27.0	
9.7	34 1.9	46.4		9.8	51.5	40.7		9.6	48.0	5.2		9.8	14.6	23.5		9.4	1 0.0	35.4	
9.2	4.7	26.3	M	9.7	41 1.3	36.9		9.6	57.4	7.5		9.4	15.8	52.7		9.0	0.3	7.5	
8.8	5.2	0.3		10	2.0	45.5		9.1	49 3.7	25.4	K	9.0	19.5	58.0	M	9.8	7.4	55.8	
9.0	9.4	14.1		7.8	9.3	56.8	K	10	10.2	56.7		9.5	21.0	4.0		9.7	8.8	24.0	
9.7	28.1	50.0		10	14.6	51.6		9.8	17.4	32.5		9.8	22.3	23.0		9.8	16.5	23.0	
9.3	30.7	18.4		9.8	30.0	27.4		9.0	21.1	0.3	K	8.8	23.4	28.2		9.3	20.4	21.0	
9.6	37.2	36.2		9.8	30.8	23.3		9.8	23.3	39.4		9.6	32.2	11.5		8.5	24.4	23.8	S
9.3	38.7	53.1		9.5	32.4	57.1		10	25.6	27.2		9.4	40.5	30.3		8.4	25.1	4.4	
9.8	39.8	17.9		9.0	40.4	55.6		9.0	34.9	5.4		9.8	48.1	18.0		8.7	26.9	33.1	
10	35 9.8	12.1		9.3	43.7	9.8		9.4	39.3	43.2		9.1	53.4	37.1		9.1	50.1	4.6	
9.0	20.7	6.5		8.3	44.6	41.2	L	9.8	51.4	25.2		9.5	55.6	51.7		9.0	2 2.7	57.1	
9.4	21.3	2.8		9.8	42 2.3	26.0		9.8	53.4	22.4		9.8	57.3	7.2		8.8	13.3	1.9	K
8.9	23.3	22.2	M	9.4	12.5	58.2		8.5	50 6.2	48.3	K	9.5	56 1.6	32.7		9.8	16.4	16.8	
9.7	24.2	36.7		9.3	12.9	59.0		9.0	14.0	45.5	K	8.7	2.5	9.1		6.8	28.2	6.8	K
10	30.2	18.4		9.8	36.4	47.6		8.2	16.7	5.4		8.9	13.0	54.5	M	9.5	28.7	19.0	
9.1	38.5	9.7		10	52.2	12.7		7.2	19.7	38.4	K	8.2	18.8	59.1	L	8.9	29.8	25.8	
7.8	48.0	36.2	L	9.8	59.8	20.2		9.8	22.1	24.7		9.6	24.5	41.3		9.5	36.0	48.0	
9.3	50.7	19.4		10	43 2.1	8.6		9.4	23.4	11.4		8.4	25.4	55.3	L	9.8	42.3	52.6	
9.5	57.9	42.6		9.7	2.9	33.9		9.5	31.3	39.4		10	31.7	13.5		8.8	48.1	48.3	K
9.8	59.2	2.0		9.5	24.7	27.4		9.2	32.5	55.6	K	9.4	34.1	9.5		9.4	3 2.5	23.2	
9.4	36 2.3	32.0	M	9.8	39.9	47.4		8.7	32.6	45.1	K	9.4	34.6	29.7		9.4	24.1	46.7	
9.5	4.9	50.1		9.3	45.5	18.1		9.7	43.6	32.8		10	35.2	4.3		8.0	26.9	53.2	K

1901—1960				1961—2020				2021—2080				2081—2140				2141—2200			
	7h		−10°		7h		−10°		7h		−10°		7h		−10°		7h		−10°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.8	3	27.1	23.7	9.4	10	10.2	50.2	8.7	16	20.8	48.7	9.2	24	7.8	1.3	K	8.3	31	51.8	13.3	K
9.8		49.6	19.0	9.5		10.9	20.0	9.2		24.1	48.6	9.3		13.4	39.8		9.2		53.9	19.1	
9.8		50.4	34.2	9.0		13.8	0.2	8.9		35.9	15.9	9.8		20.9	21.7		10	32	19.0	3.5	
9.0	4	9.2	30.1 K	9.1		20.7	4.3	9.4		40.7	3.0	9.8		26.1	53.8		9.5		22.0	36.4	
9.8		15.7	58.6	10		23.8	2.7	9.2		42.7	5.2	9.4		31.7	25.3		9.8		40.9	9.8	
8.1		24.3	18.3 L	9.5		40.7	13.5	8.9		55.6	40.5 K	9.5		56.5	19.2		9.7		42.1	8.1	
9.0		25.6	27.9 K	9.4		50.2	15.7	10		58.0	52.7	9.3	25	4.7	11.7		9.8		43.8	44.9	
7.5		28.8	11.0 L	9.4	11	3.2	56.8	9.3	17	10.0	11.9	9.5		9.4	50.2		9.4		49.1	7.9	
9.8		47.5	28.6	9.2		7.1	11.1	9.5		24.1	40.4	9.5		17.3	50.6		9.1		53.4	18.3	
9.3		54.0	16.5	9.5		14.1	56.6	10		29.1	39.3	9.8		21.8	52.6		9.5	33	30.7	58.8	
9.5		57.1	41.5	8.5		16.1	23.9 L	9.3		30.2	42.3	9.5		25.2	18.0		9.5		39.4	9.8	
9.8		59.0	11.8	9.4		17.5	59.0	9.5		32.5	52.6	8.4		25.8	11.8 K		9.5		46.2	15.1	
9.6	5	14.1	20.7	9.8		22.3	11.5	9.4	18	23.7	45.6	8.7		54.5	53.0		9.1		53.1	24.9	
9.2		26.6	42.8	8.8		24.0	43.2 K	9.8		40.8	8.0	9.5		56.6	37.2		9.3		53.3	14.9	
9.2		26.7	16.2	9.7		37.2	20.4	8.9		45.9	28.7	9.6	26	13.9	24.5		9.1		54.6	28.4	
8.8		37.6	45.1	8.7		41.1	55.9 Sj	9.5	19	2.4	12.7	9.3		16.5	34.4		9.6	34	1.2	27.9	
9.9		44.8	7.1	9.2	12	5.9	59.1	8.6		4.0	26.1 K	9.5		20.7	38.9		9.8		4.1	54.8	
9.2		48.5	53.4	9.3		9.6	13.2	8.4		17.0	15.8 K	9.5		22.4	49.0		9.4		16.1	1.8	
9.8		48.9	41.9	9.3		9.7	23.8	9.8		21.3	29.8	9.3		24.0	43.0 K		8.7		17.7	3.8	
9.8	6	1.4	11.4	9.5		15.3	6.8	8.6		37.7	39.4 L	8.8		24.3	10.4 K		9.8		27.4	37.3	
9.5		8.8	58.7	9.8		21.0	55.0	9.8		37.8	25.2	9.3		27.9	50.1		9.6		29.6	27.6	
9.8		16.9	35.5	9.5		21.9	27.2	9.8		44.8	3.8	10		44.5	16.7		9.0		37.8	23.2	
9.5		19.2	28.5	8.9		26.5	39.0 K	9.3		47.6	46.5	9.4		50.2	14.0		9.6		38.3	25.4	
9.3		24.1	24.4	9.0		29.3	33.6 K	9.6		49.7	11.7	8.5	27	10.9	44.3 K		9.9		47.2	55.3	
9.0		39.7	16.0	8.7		31.8	15.2 K	9.5		52.1	32.9	8.1		17.1	56.0 K		8.2		49.5	27.3	
9.2		41.8	14.8	9.2		33.6	56.3	8.7		54.0	45.9 L	9.5		19.0	30.8		8.8		54.4	55.2 K	
10	7	2.2	0.1	9.4		34.6	17.7	8.9		54.1	13.0 K	9.5		30.8	20.0		8.8		57.3	4.0 Sj	
8.1		8.2	11.8	9.3		34.6	13.1	9.7		54.8	15.7	9.1		41.9	2.0		9.2	35	1.6	24.1	
9.8		13.5	32.3	9.7		41.4	10.0	9.8		55.3	8.4	9.5		49.8	55.3		9.3		2.0	0.1	
9.3		20.9	12.3	9.4	13	1.2	59.2	9.5	20	8.8	28.0	9.4		52.2	31.8		9.3		18.7	57.6 K	
9.8		25.2	22.5	9.0		4.0	2.3 K	9.8		11.0	16.7	8.8		54.2	48.6 K		8.6		25.4	32.6 K	
9.7		26.3	28.9	9.5		19.5	42.0	9.8		18.4	22.2	9.6		57.3	57.2		8.4		28.2	36.1 K	
6.4		35.3	3.9 L	9.7		23.6	10.4	9.4		28.9	47.2	9.0	28	5.1	29.5		9.8		45.6	36.7	
9.0		41.1	2.5	9.5		25.4	49.8	9.3		35.2	33.7	8.4		5.8	17.8		9.9		54.4	1.7	
9.4		41.4	2.3	9.4		36.5	37.5	8.9		47.6	54.8 Sj	9.4		6.8	29.5		8.9	36	3.5	33.4 K	
9.1		46.0	17.9	8.5		40.7	58.6 K	9.8		48.9	23.3	9.3		9.7	4.2		9.1		5.3	18.1	
9.5		57.7	44.4	9.4		41.5	50.5	9.8	21	11.3	27.4	9.3		26.7	27.3		8.8		14.2	26.2 K	
9.5	8	3.7	41.4	9.0		44.7	41.7	9.5		13.6	37.8	9.4		26.9	48.0		9.1		21.5	43.6	
9.6		11.3	16.3	9.1		45.7	17.9	8.8		18.1	39.2	9.8		38.8	29.1		9.4		22.7	55.9	
9.3		27.0	49.0	9.5		51.4	12.9	9.5		22.0	55.7	9.7		47.8	12.6		10		24.8	17.0	
9.5		27.2	37.7	9.3		55.1	20.4	8.0		26.7	58.1 Sj	9.8		54.3	52.8		9.9		26.5	48.5	
9.8		30.5	31.4	9.2	14	12.3	36.8	9.8		56.4	45.4	9.8	29	2.9	15.8		9.2		37.4	1.6	
8.7		35.6	38.5 K	9.7		12.3	18.6	9.7	22	7.2	36.8	9.3		18.1	34.8		9.5		42.4	32.2	
9.4		36.4	9.5	9.5		21.3	26.2	9.4		15.5	6.2	9.2		27.2	25.3		9.4		43.5	37.2	
6.3		51.2	20.1 K	9.1		36.0	4.2	9.0		18.7	45.5	9.3		46.4	47.5		9.3		44.2	40.1	
9.6		52.2	25.4	10		42.6	1.4	9.5		24.8	19.0	8.1		48.6	19.3 L		9.0	37	2.0	25.7 K	
9.1	9	3.0	43.8	9.3		43.4	2.3	5.5		29.5	1.9 L	9.2	30	0.2	7.4		8.8		3.5	43.6	
9.5		3.2	5.0	9.8		58.5	54.1	9.8		34.9	5.7	9.3		1.9	3.0		9.5		3.9	23.4	
9.5		3.3	15.7	9.2		59.7	28.1	9.7		37.6	0.7	9.2		3.3	20.2		9.2		9.5	11.8	
9.3		7.2	52.4	9.3	15	3.1	7.7	9.2		44.5	14.8	8.9		14.7	27.4		8.3		10.4	58.2 L	
9.1		19.6	37.8 K	9.3		3.1	55.2	9.5	23	2.1	19.4	9.2		33.6	49.7		8.7		19.3	23.9 K	
9.6		31.2	34.8 K	9.4		4.6	17.0	8.6		6.3	57.0	9.6		35.6	13.7		9.5		48.2	22.9	
9.5		32.8	28.9	9.2		24.0	50.7	9.3		8.7	57.4	9.4		47.7	38.7		9.8		56.7	18.3	
9.1		33.5	50.7 K	9.8		30.0	1.1	9.3		25.7	46.4	9.4		56.2	53.3		9.8	38	0.4	12.0	
9.5		34.3	23.6	9.0		31.7	33.1	9.8		36.2	41.5	9.5		57.1	33.4		9.8		1.0	21.9	
9.7		44.3	29.6	9.7		40.2	57.2	9.3		39.7	43.1	9.8		59.7	52.0		8.7		4.9	25.3 K	
10		47.1	25.6	9.6		43.2	58.7	9.7		46.5	53.8	7.1	31	19.1	17.5 K		9.7		17.1	11.9	
9.4		57.4	41.2	9.1	16	0.3	11.9	9.2		56.6	46.9	9.8		38.8	47.8		8.2		20.9	28.5 Sj	
9.8	10	5.1	34.0	8.9		3.2	16.0 —	8.7	24	0.4	15.0	9.4		44.2	30.1		9.3		22.8	39.4	
9.7		9.6	13.4	9.7		17.1	34.4	9.3		5.0	2.5	9.1		50.7	53.1		9.8		24.3	47.3	

2067 : rothgelb

2201—2260

	7h	−10°	
m	m s	′	
8.7	38 25.5	31.2	K
9.5	38.2	25.1	
9.8	44.8	56.3	
9.7	46.6	38.6	
9.7	47.4	36.5	
9.8	54.3	44.6	
9.5	56.9	52.5	
9.5	39 4.9	12.2	
9.6	5.4	20.7	
9.4	11.1	34.6	
9.7	19.9	4.4	
9.8	30.0	37.0	
9.1	40.2	45.3	
9.5	49.3	50.3	
9.3	57.9	6.5	
9.2	40 1.7	39.2	
9.8	2.6	55.0	
8.8	12.2	31.8	
9.8	18.5	35.5	
9.2	18.6	23.3	K
9.7	20.7	10.7	
9.3	36.5	0.2	
9.5	47.8	54.6	
10	51.1	8.0	
9.2	41 3.8	58.6	K
9.5	11.6	54.7	
9.3	21.0	40.1	
8.5	27.1	38.6	Sj
8.9	36.5	19.1	
9.5	37.2	20.0	
9.3	41.9	31.7	
9.3	48.4	37.3	
9.1	50.5	5.6	
9.5	42 1.1	56.7	
9.3	5.2	5.5	
8.8	10.3	45.4	K
6.8	14.9	49.3	K
9.3	16.6	59.4	
7.0	19.2	8.2	L
9.5	24.0	34.5	
9.5	44.3	32.6	
9.5	49.5	21.1	
9.4	50.7	36.5	
9.5	59.1	13.0	
9.3	43 7.0	17.5	
9.4	10.5	58.8	
9.2	14.1	20.9	
9.6	15.0	46.2	
9.3	49.8	58.5	
9.8	53.4	59.9	
9.7	56.4	31.0	
9.5	44 0.3	38.8	
6.0	2.7	45.7	Sj
9.7	4.4	2.7	
9.2	8.2	44.8	K
9.1	15.0	21.0	
8.0	26.5	48.1	K
9.3	35.8	0.2	
9.0	42.1	0.0	K
9.5	55.1	4.8	

2261—2320

	7h	−10°	
m	m s	′	
9.5	44 57.9	23.7	
9.9	58.3	6.7	
7.8	45 3.8	39.4	K
9.3	14.8	28.7	
9.0	14.9	48.3	
8.7	21.9	23.6	
9.8	24.3	47.8	
9.9	33.5	57.5	
9.2	35.9	12.3	
9.8	36.4	34.2	
10	46.1	29.1	
9.5	58.7	1.4	
9.2	46 0.6	22.2	
9.8	44.0	13.3	
9.7	52.8	2.5	
9.6	57.8	6.1	
9.4	58.0	13.6	
7.7	47 8.6	11.3	L
8.5	9.2	46.5	Sj
9.6	21.2	28.0	
9.4	46.3	2.5	
9.5	46.6	58.1	
8.7	48.1	4.5	
8.3	55.6	42.0	K
8.4	48 3.9	49.1	K
9.6	7.4	21.5	
9.5	15.7	38.2	
9.5	18.5	39.7	
7.8	24.3	46.4	Sj
9.4	29.1	35.2	
9.5	34.6	49.8	
9.5	36.3	18.8	
9.5	36.9	6.7	
7.5	38.7	16.8	K
8.3	49 4.8	17.7	K
9.0	16.3	10.9	K
9.1	35.8	40.5	Sj
9.6	36.5	14.3	
8.8	52.5	28.7	L
9.1	52.7	13.1	K
9.8	50 1.8	42.8	
9.1	10.7	33.9	
9.4	27.2	34.0	
8.3	31.5	23.1	L
9.4	36.5	58.0	
9.3	38.4	47.1	
9.2	40.7	34.5	
9.5	51 4.0	0.4	
8.0	11.1	29.8	L
10	12.7	1.0	
9.7	24.2	58.5	
9.6	30.8	34.7	
8.7	55.4	33.2	K
8.7	56.1	38.8	Sj
8.8	52 4.4	50.9	
9.5	9.3	16.9	
9.2	15.1	8.1	
8.9	26.4	49.9	K
8.8	29.6	5.3	
9.6	31.0	15.6	

2321—2380

	7h	−10°	
m	m s	′	
9.8	52 46.1	52.5	
9.4	51.9	4.4	
9.4	53 1.4	23.4	
9.5	2.7	52.5	
9.5	6.7	10.1	
9.8	10.9	23.5	
9.4	13.2	43.8	
9.5	16.1	55.0	
8.8	19.7	1.1	
9.0	37.6	38.9	K
9.5	40.8	5.0	
9.0	45.6	46.3	
9.8	45.9	6.5	
9.7	54 2.1	12.6	
9.5	15.0	28.1	
9.5	25.0	15.4	
9.3	26.8	16.5	
9.8	33.6	55.5	
9.5	39.9	40.4	
9.8	47.9	9.2	
9.4	50.3	41.6	
8.8	58.8	22.9	Sj
9.7	55 4.9	32.0	
9.5	8.8	10.6	
9.8	14.4	10.7	
9.4	17.8	23.5	
9.7	48.9	47.1	
9.8	49.2	0.5	
9.3	50.6	17.9	
9.4	55.0	3.2	
9.0	55.7	42.3	
9.3	56 0.2	41.0	
9.8	10.8	3.7	
9.4	22.8	43.6	
9.0	27.0	5.5	
8.5	40.5	41.0	
8.9	48.6	35.3	
9.3	50.5	37.6	
9.5	52.5	29.7	
8.6	57.6	5.1	K
9.4	57 11.7	16.8	
7.3	12.2	1.6	K
9.7	17.0	49.4	
9.5	17.9	54.2	
9.1	28.6	6.4	
8.7	36.4	14.0	Sj
9.5	40.7	29.8	
10	48.8	6.4	
9.4	53.4	45.9	
9.0	58 6.9	2.2	
9.5	33.0	6.2	
8.9	35.7	12.6	
9.5	41.9	49.6	
9.3	43.0	24.3	
8.6	44.3	54.9	
9.4	46.5	35.8	
8.2	48.0	15.5	K
10	59 5.6	20.5	
9.4	9.4	42.0	
9.8	16.8	12.0	

2381—2440

	7h—8h	−10°	
m	m s	′	
9.5	59 17.2	6.5	
9.1	37.7	34.1	
9.5	38.2	59.6	
9.5	41.4	18.7	
9.0	52.4	21.1	
9.0	0 4.1	3.2	K
9.8	9.2	10.1	
9.8	39.1	52.1	
9.4	39.7	55.3	
9.5	51.2	9.9	
9.5	1 12.4	12.6	
9.5	15.9	54.5	
9.8	20.8	35.1	
9.8	26.3	7.5	
9.0	32.2	52.3	
9.3	49.1	22.7	
9.4	55.7	2.3	
9.2	56.2	47.3	
9.4	58.3	43.3	
6.6	2 3.9	55.1	K
9.3	27.8	34.1	
9.5	32.5	56.8	
9.3	42.9	56.3	
9.2	3 7.3	43.1	Sj
9.4	15.4	21.4	
9.3	35.3	5.1	
9.7	49.3	25.8	
9.3	4 4.7	17.6	
9.1	5.6	11.2	
9.5	5.9	5.0	
9.7	9.6	41.9	
9.1	11.2	31.5	
9.1	19.1	50.6	K
9.4	25.3	26.2	
9.5	38.4	33.6	
9.3	40.3	8.9	
9.8	47.0	1.5	
9.0	49.1	18.3	
8.8	51.8	54.9	
9.5	5 7.4	45.0	
9.0	11.1	16.4	
7.8	29.0	24.2	
9.4	42.9	31.6	
8.9	44.2	6.8	K
9.4	56.5	0.2	
9.3	58.4	40.2	Sj
9.3	6 8.9	11.2	
9.1	12.4	34.4	
9.4	19.7	2.0	
9.5	34.5	51.1	K
8.9	35.8	32.0	
9.2	39.4	35.0	
9.4	52.1	1.1	
10	7 34.4	19.0	
9.1	50.3	1.3	
9.0	8 4.7	19.2	
8.9	10.2	5.9	
9.5	13.4	37.5	
8.0	32.1	51.0	Sj
9.4	32.9	39.9	

2441—2500

	8h	−10°	
m	m s	′	
9.3	8 38.7	48.6	
9.3	43.0	41.7	
8.7	49.1	0.4	K
10	59.9	56.9	
9.5	9 0.2	17.6	
9.7	2.9	2.2	
9.2	33.8	17.5	
9.7	10 5.3	41.0	
9.3	6.1	42.9	
9.2	6.7	47.5	
7.7	10.9	25.5	K
9.0	14.1	13.3	
8.0	18.5	1.4	K
9.4	27.1	58.1	
9.0	27.7	28.9	K
9.3	32.1	33.6	
9.5	50.5	16.7	
9.8	11 3.8	46.4	
9.5	10.2	0.3	
9.5	11.3	41.8	
8.7	11.7	2.8	K
9.5	14.6	49.9	
10	15.3	52.9	
9.3	20.0	32.2	
10	22.8	51.9	
9.4	23.2	55.5	
9.7	27.7	32.4	
9.1	29.8	2.2	K
10	47.5	0.3	
9.7	48.3	23.2	
9.4	49.2	27.0	
9.2	12 1.5	12.1	
9.8	1.5	10.4	
9.4	23.7	34.4	
9.8	33.1	35.2	
9.8	52.5	14.0	
8.8	13 13.1	52.6	
9.2	14.1	0.1	
9.5	23.3	18.0	
9.0	23.7	52.5	
9.4	23.7	43.5	
9.3	23.8	18.8	
8.9	25.2	14.5	K
9.4	48.3	27.7	
9.7	14 5.6	39.2	
9.6	24.5	34.6	
9.3	29.9	51.5	
9.2	35.0	2.3	
9.8	36.0	4.5	
6.8	41.8	35.3	K
6.9	15 1.7	17.4	K
9.5	19.1	54.8	
8.9	20.0	15.0	K
9.3	30.0	59.9	K
8.9	39.2	13.6	
9.1	57.1	18.4	
9.3	16 8.0	32.3	
8.9	16.9	31.8	
9.3	21.9	19.7	
9.5	28.3	47.8	

2501—2560				2561—2620				2621—2680				2681—2740				2741—2800			
	8h		−10°		8h		−10°		8h		−10°		8h		−10°		8h—9h		−10°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.3	16	47.7	11.9	9.7	26	3.3	53.1	9.8	37	7.7	54.9	9.3	46	53.2	7.6	7.9	59	2.0	45.8	K
9.0	17	17.3	58.9	9.4		12.9	2.2	8.8		11.6	35.4	K	9.3		55.8	10.4	9.2		9.2	16.9	
8.8		18.4	42.4	K	9.3		14.9	2.2	9.8		12.8	22.5	9.4	47	2.2	38.0	9.3		29.8	57.8	
9.4		25.2	51.8	9.9		34.3	47.1	10		21.2	11.5	9.8		2.7	19.0	9.8		33.0	59.9	
9.4		33.4	16.5	8.0		54.5	28.5	K	9.6		39.7	27.4	7.9		10.3	22.5	K	9.4	0	3.7	53.7
7.8		33.8	2.7	K	9.0		58.6	10.8	9.2		53.3	13.4	9.8		16.6	44.9		8.0		18.0	9.1	K
9.2		38.0	15.9	9.5	27	10.0	2.9	9.3	38	21.1	42.1	9.2		38.4	1.7		9.2		20.8	32.0	
8.3		52.6	16.9	K	10		16.5	9.8	10		33.4	43.4	6.8		41.1	49.4	Sj	9.7		21.8	35.4	
9.1	18	20.0	10.9		10		41.9	4.5	9.7		44.1	13.0	9.3		51.6	29.7		9.8		34.3	8.7	
10		33.1	1.2		8.5		59.2	26.1	K	9.2		47.6	35.9	K	7.9	48	1.0	26.1	K	9.3		50.8	46.1	
9.0		36.6	18.8		9.5	28	18.0	47.5		9.3	39	4.1	52.0		9.0		16.8	50.2	K	9.8	1	5.7	3.2	
9.0		46.7	2.7		8.4		38.9	17.4		9.7		4.3	42.8		7.1		20.2	49.0	Sj	9.8		12.5	23.4	
9.3		55.1	29.8		9.5		44.5	50.9		9.5		5.1	44.8		8.4	49	2.2	20.4		9.6		16.4	14.5	
6.3	19	4.4	2.6	K	9.5		51.8	31.8		6.0		9.7	28.8	K	8.1		7.0	35.9	K	7.1		52.4	10.4	K
9.1		17.0	8.4		7.7		56.5	47.5	L	6.9		11.2	18.1	K	10		18.9	17.3		9.8		55.6	58.0	
9.3		19.7	34.5		9.2	29	16.7	4.4		8.3		18.6	51.9		9.3		20.5	40.7		9.2	2	0.2	15.5	
9.7		37.4	54.3		9.5		26.7	34.1		9.1		20.4	8.1		8.1		34.7	32.8	K	8.5		10.4	59.3	K
9.0		46.7	32.6		7.8		34.5	3.8	K	9.3		30.4	25.2		9.5		37.2	41.2		9.1		31.8	3.9	
9.7		47.5	18.2		9.2		46.2	51.7		9.3		32.0	11.9		8.9		48.7	33.1	K	9.3		52.6	38.9	
9.4		54.6	41.6		10	30	12.9	15.1		9.3		41.6	24.8		9.6	50	11.9	25.7		9.8	3	6.8	45.7	
9.0		55.6	25.9		9.3		19.7	38.9		8.6	40	9.1	14.9	K	9.3		23.4	5.2		8.8		21.5	51.1	
9.2		55.7	4.1		9.5		32.8	9.4		8.9		9.4	21.3		9.6		25.5	33.9		8.2	4	35.9	52.9	Sj
9.8	20	7.5	55.2		8.5		40.2	26.6	Sj	9.8		33.5	42.1		9.4		50.7	50.0		9.8		39.5	43.7	
9.5		8.9	48.4		10	31	9.6	2.4		9.1		58.1	48.9	K	9.8		55.1	1.5		9.5		48.8	9.7	
9.2		10.4	53.7		9.0		11.4	37.5	K	9.9	41	20.4	37.3		9.7		59.3	35.9		9.8	5	15.7	10.6	
9.1		20.5	55.8		9.5		24.5	16.5		9.2		24.1	41.0		10	51	8.2	1.3		7.6		18.4	29.1	L
10		29.2	2.6		9.6		27.9	51.6		10		40.6	44.2		8.9		8.4	25.0		8.0		28.0	8.1	
9.8		29.6	45.5		7.9		29.1	19.0	K	9.8	42	1.7	27.6		9.3		23.2	55.0		8.8		32.0	58.2	K
9.3		29.8	27.5		9.5		31.6	23.5		9.4		6.5	49.1		8.3		39.9	46.2	K	8.0		36.2	53.8	K
9.2		37.0	51.9		10		49.3	15.2		8.5		7.5	19.9	Sj	9.3		41.6	34.2		9.6		38.0	48.3	
9.1	21	5.0	59.5		9.7	32	9.7	30.4		7.0		24.2	21.2	K	9.5		54.8	20.4		9.8		53.3	41.9	
9.8		15.4	17.1		9.8		37.1	54.4		9.5		26.6	14.2		9.6	52	57.5	25.0		9.6		53.1	21.1	
9.5		15.9	50.4		9.5		46.3	25.5		9.5		28.0	14.6		9.6	53	3.1	23.0		9.6		53.6	9.8	
9.8		16.5	12.2		9.6		52.6	21.5		7.5		29.6	29.2	K	9.6		11.3	36.9		9.5	6	2.0	3.3	
9.1		17.3	54.9		8.7	33	23.8	27.3	Sj	9.7		51.1	59.0		9.5		31.6	48.5		9.1		3.3	5.2	
9.3		17.5	35.1		9.3		35.0	53.2		9.7	43	2.0	20.9		8.9		41.6	34.4		8.4		14.9	12.1	K
10		25.9	51.8		9.6		41.2	20.0		9.5		12.4	18.6		9.4		54.2	8.3		9.3		22.6	37.9	
9.4		30.0	4.4		9.1		43.5	13.8		8.4		17.7	36.2	K	9.5		56.0	9.9		9.3		23.2	16.3	
8.7		37.5	54.5		9.3		46.7	58.3		9.3		22.3	49.1		10	54	15.2	21.2		8.4		24.8	29.9	K
9.7	22	0.0	36.6		9.3	34	6.8	37.2		9.3		57.9	14.2		8.0		27.4	40.2	K	7.9		26.6	37.9	K
10		13.1	52.8		9.1		7.6	39.0		9.6	44	4.6	13.6		9.5		42.3	16.6		9.8		26.8	18.6	
9.2		17.8	10.2		9.6		8.2	53.3		10		7.6	27.6		8.5		44.7	41.6	K	9.8		54.2	12.2	
9.8		42.0	17.7		9.3		10.3	33.4		9.2		8.6	14.7		9.7		57.4	32.1		9.3		57.3	24.5	
9.1		46.5	22.3		9.5		17.0	35.9		9.5		15.3	41.9		8.4	55	22.5	19.9	K	9.7	7	9.4	48.6	
10		55.0	16.6		10		19.2	11.8		8.9		36.1	54.7		9.2		45.2	13.0		9.7		42.6	28.1	
8.1	23	23.9	8.1	K	9.4		22.1	35.0		9.2		38.9	6.3		10		55.6	51.3		8.6	8	28.2	27.8	Sj
9.3		25.9	23.8		9.5		22.7	48.5		9.4		44.0	14.9		9.7	56	6.2	24.6		9.7		42.5	42.4	
9.5		34.3	35.3		9.5		34.9	19.0		8.4		53.0	36.2	Sj	9.4		10.1	1.6		9.3		59.1	38.4	
8.7		35.4	45.9	K	9.4		40.3	33.4		9.8	45	3.1	13.5		9.2		25.9	2.0		8.5	9	26.6	25.0	K
8.1	24	15.1	27.0		9.2	35	21.6	13.1		9.1		12.3	6.7		9.8		45.2	23.3		9.3		29.5	43.3	
8.9		22.1	58.6	K	8.3		31.1	30.3	K	9.8		17.3	26.7		9.5	57	16.0	10.8		9.7		31.4	11.4	
9.8		25.2	5.6		9.1		49.4	54.2		8.7		19.1	42.9	K	8.4		17.9	5.2	K	8.8		38.0	34.5	K
9.2		29.7	49.6		9.3		51.8	29.2		9.3		19.6	10.0		10		35.2	13.0		8.6		40.4	20.4	K
9.2		32.5	41.6		9.4		52.2	21.6		10		43.0	55.0		9.1		43.9	9.3		6.3		56.2	29.8	K
9.9	25	13.6	21.8		9.3		57.4	29.6		8.8		57.7	59.6		9.9		55.6	23.1		9.3	10	0.4	7.9	
9.4		17.3	1.0		9.6	36	11.1	57.9		9.3	46	3.7	46.1		8.5	58	3.5	48.3	L	8.9		15.6	8.5	
9.3		27.5	4.7		9.5		15.0	48.0		8.9		16.4	40.7	K	9.6		6.9	51.0		10		26.1	45.5	
8.1		34.3	55.0	K	9.5		40.9	20.0		7.2		31.8	50.7	K	9.3		29.9	11.6		9.5		56.2	27.7	
9.5		51.4	31.2		8.5	37	2.4	2.2	K	9.6		37.5	1.3		9.8		47.9	27.3		8.8	11	13.8	41.1	
9.4		55.8	17.4		9.8		3.6	57.1		9.8		38.5	23.4		9.2	59	0.4	12.9		9.2		18.1	28.7	

2801—2880					2861—2920					2921—2980					2981—2040					3041—3100				
	9h		—10°			9h		—10°			9h		—10°			9h—10h		—10°			10h		—10°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
7.5	12	13.1	32.7	Sj	9.5	26	24.8	32.6		9.7	40	19.9	53.9		8.9	55	45.2	42.6		8.7	12	10.6	15.4	
8.9		15.4	37.5	K	9.0		33.9	45.0		9.3		21.1	32.3		8.6		48.1	31.9	L	9.1		15.1	9.8	M
9.2		26.2	59.8	Sj	10		55.4	49.9		9.0		44.6	52.8	K	8.8		58.6	28.7	K	9.3	13	26.5	4.4	
6.8		33.4	42.3	K	9.9	27	2.3	7.6		9.8		46.2	54.8		8.8		58.7	46.1	L	9.5	14	14.7	2.8	
8.3		45.2	34.8	K	9.2		4.7	59.9		9.0		56.0	41.8		7.2	56	14.2	1.6	K	9.1		25.0	46.6	M
10		53.2	52.1		9.1		15.4	23.9	Sj	8.8		57.3	12.3	K	9.2		28.6	17.4		9.3	15	0.6	35.3	M
9.3	13	9.0	3.2		9.8		33.6	59.2		9.5		58.2	13.2		8.0	58	13.0	30.1	K	9.4		0.8	31.6	
8.5		12.8	7.2	K	9.5		46.5	42.7		8.8	41	27.6	51.7	K	9.3		35.0	29.2		9.3		1.8	27.2	
8.6		55.1	59.2		9.3		49.0	43.9	M	9.1		46.5	9.4		9.1		37.7	0.6		9.8		20.8	30.1	
9.8	14	1.7	58.6		9.4	28	17.1	29.8		9.3		49.8	3.6		9.2		57.1	58.4		9.8		35.7	41.0	
8.9		2.0	46.3		10		25.3	37.0		9.8	42	3.7	55.5		8.8	59	31.7	23.4		8.4		50.3	32.8	K
9.5		17.7	17.9		9.3		52.2	7.8		9.2		23.4	5.6		8.9		48.7	50.5	K	9.8	16	40.8	33.2	
9.2		29.3	30.6		9.0		54.2	11.9	K	9.6		32.4	15.5		9.5		54.1	41.5		9.4		47.9	12.7	
9.2		33.8	37.2		7.3	29	28.3	37.5	K	9.7		36.7	23.0		8.6	0	3.0	36.9	K	9.0		59.6	15.1	
8.8		41.9	13.7		10		29.7	47.8		9.7		54.6	40.9		8.1		41.3	20.5	K	9.6	17	2.1	4.6	
9.8		52.3	13.6		8.8		33.2	9.2		9.8	43	5.8	50.6		9.2		53.8	32.8		9.3		10.4	11.5	M
9.3		52.7	29.5		9.0		41.4	57.0	K	9.8		39.5	31.7		9.5	1	12.2	38.1		9.5		20.7	55.5	
9.6	15	0.0	55.9		8.4		49.1	28.8	K	9.5	44	10.0	11.2		8.0		20.5	24.6	K	9.5		35.3	58.1	
9.5		1.1	43.1		9.7	30	6.3	15.7		9.3		18.1	14.8		9.5		23.1	5.9		10		35.7	55.0	
9.7		15.2	22.1		9.5		47.8	27.0		6.3		35.3	39.6	K	6.6		37.9	10.6	K	9.4		58.7	28.4	
9.2		26.5	26.0		10	31	10.9	48.2		9.1		39.8	40.5		9.8		54.2	1.4		10	18	10.5	18.6	
8.8		45.6	33.9	K	9.2		16.6	1.8		9.2		40.5	37.1		9.4		55.0	28.5		9.5		57.7	28.5	
9.6		52.8	14.5		10		37.8	31.4		9.3	46	3.7	0.2		8.8		55.5	49.9	K	9.4	19	19.9	46.4	
9.4	16	0.1	13.7		9.3	32	8.5	4.8		9.4		9.2	52.2		9.3		59.2	59.7		9.5	20	8.8	38.6	
9.1		1.5	30.3	Sj	9.1		25.1	33.5		9.8		50.5	47.7		9.1	2	1.1	28.8		9.2		55.7	35.4	
9.6		8.4	53.1		8.0		41.7	3.7	K	9.2	47	28.4	56.4		8.9		54.4	9.4	K	9.4	21	37.4	37.3	
9.3		20.3	52.8		9.7	33	9.6	46.6		9.3		48.7	31.3		9.9		57.3	35.3		9.7		44.0	28.5	
8.5		31.5	11.9	L	6.1		15.7	6.6	K	7.0	48	7.7	20.9	K	9.5	3	4.6	18.6		9.4		45.6	43.1	
9.7		39.1	49.0		10		40.4	15.0		9.7		45.8	43.8		9.6		21.3	50.4		9.4		51.9	54.9	
9.8		49.6	55.5		10	34	39.5	19.0		8.7		48.5	34.0	L	9.0		33.2	45.8	K	9.7	22	30.9	13.9	
9.8		52.9	11.1		8.9		49.3	34.8		8.8		57.4	46.9		9.4		49.4	52.6		9.1	23	5.7	16.1	M
8.6		59.1	28.1	K	9.4	35	9.6	25.0		9.5	49	26.3	47.0		9.6		49.8	36.7		9.0		10.8	49.5	
10	17	21.1	3.8		9.4		28.7	17.9		9.9		32.2	37.6		9.5		53.1	14.1		7.3		22.0	3.5	Sj
7.5		52.5	18.9	K	8.3		34.5	13.3	K	9.5		36.5	8.2		9.5		57.5	16.4		9.4		22.7	6.9	
9.0	18	38.6	58.3		9.2		39.5	20.1		9.3	50	8.2	13.9		9.5	4	18.8	33.3		9.7	24	25.5	0.6	
10		57.4	23.1		10		47.2	50.7		9.4		26.2	55.1		9.6		21.7	34.2		7.0		50.7	40.5	K
9.5	19	55.7	43.1		8.8		47.5	1.8	K	8.7		44.9	8.1		9.2		31.1	18.0		9.4		51.8	12.2	
8.6	20	55.2	55.7	K	9.3		57.1	37.5		8.8		55.4	16.0	M	9.5		40.4	33.6		9.1		55.5	59.3	K
10	21	8.0	59.2		8.8	36	11.7	53.6	K	9.3		58.0	2.2		9.5		57.7	9.5		9.3	25	1.4	49.2	
9.7		8.5	43.1		9.3		15.8	7.1		9.9	51	24.3	24.5		8.2	5	9.5	25.6	K	9.8		31.9	3.5	
9.5		17.1	16.5		9.3		19.0	11.1		8.3		34.5	23.1	K	8.9		42.7	29.2	K	9.2		58.3	20.2	
9.3		30.1	11.3		9.8		21.1	31.9		10		39.8	10.9		9.9	6	0.6	27.3		9.8	26	8.6	59.2	
9.0		39.5	19.5		10		35.6	28.7		9.4		56.8	34.9		9.8		4.9	53.7		8.7		12.9	2.9	K
9.3	22	3.0	1.6		9.7		41.1	35.4		9.1	52	20.5	4.7		9.2		13.7	30.3		9.0		20.8	10.5	K
9.4		11.8	25.3		9.1		47.9	21.7		8.2		30.3	0.9	K	9.1		29.8	57.2	K	8.2		59.9	31.6	K
9.4		23.6	29.4		9.3	37	8.0	45.9		8.7		30.3	22.5	K	9.5		44.6	57.4		9.0	27	15.0	30.7	K
9.8		38.7	4.6		9.5		18.2	45.7		9.5		43.4	10.2		8.0	8	29.8	28.0	K	9.6		17.9	14.1	
10		38.8	28.0		9.5		46.7	16.5		9.0	53	4.0	39.7		8.7		59.4	44.8	M	9.5		23.2	54.5	
9.7		50.8	11.6		10	38	10.3	55.0		10		9.2	33.6		6.3	9	0.3	29.0	K	8.3		24.9	22.3	K
9.5		57.3	17.5		9.4		28.1	29.0		9.8		15.8	55.6		9.3		29.9	0.1	M	9.5		53.0	32.0	
8.8	23	27.7	1.5	Sj	9.4		28.8	54.8		9.5		24.6	19.6		8.8		38.4	2.8	M	10	28	6.9	11.1	
9.2		46.8	39.6		7.7		37.0	41.5	K	8.5		27.9	12.1	M	10	10	10.1	5.8		9.9	29	45.4	10.9	
9.1	24	38.0	47.8		9.7		37.7	22.1		9.4		37.3	13.3		9.5		38.8	32.7		9.4		53.6	33.4	
9.1		41.1	46.6		9.6		59.2	33.2		8.7	54	1.0	23.6	K	9.1	11	20.2	57.0	M	6.8	30	0.7	59.9	L
9.5	25	2.0	55.9		9.3	39	13.5	21.8		10		10.1	17.9		9.3		22.6	59.4	M	9.3		3.3	5.5	
7.7		8.8	12.5	K	9.8		37.6	57.2		9.0		10.3	3.3		9.5		29.7	59.6		8.5		6.4	45.5	M
7.6		24.5	32.8	B	10		44.4	4.9		10		18.8	18.7		7.8		51.8	26.7	K	9.6		10.4	17.6	
9.0		36.2	31.2	B	6.8	40	4.9	4.3	K	9.7		31.4	41.9		8.5		54.2	59.9	K	9.5		11.9	16.5	
9.5		40.7	15.4		8.7		5.7	7.8	K	10	55	9.0	17.1		8.5	12	3.9	1.4	M	8.4		13.4	17.3	B
9.2	26	23.9	18.3		9.8		16.6	37.8		9.6		38.5	25.6		8.0		6.8	39.1	K	8.3		32.5	17.8	B

3101—3160				3161—3220				3221—3280				3281—3340				3341—3400			
10h		−10°		10h—11h		−10°		11h		−10°		11h		−10°		11h		−10°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.5	30	40.8	59.1	9.5	50	19.3	51.4	9.4	5	26.3	56.3	9.0	23	35.2	25.6 M	9.3	40	59.5	7.8
8.0		45.5	45.5 L	9.4		28.1	0.5	9.4	6	4.4	2.3	9.5		39.7	40.2	9.1	41	27.5	13.8 M
8.6		55.9	27.7 K	9.8		49.8	45.1	9.0		26.0	15.1 K	9.1		41.6	59.5 K	10		37.4	19.2
9.5		56.0	42.6	9.6	51	9.4	18.5	9.7		34.6	16.8	9.5	24	25.2	39.5	10	42	19.3	7.6
9.3	31	15.3	4.4 M	8.7		13.2	38.3 K	9.6	7	29.1	30.5	9.8		49.2	26.8	9.6		38.7	49.4
9.8		36.4	57.3	9.4		15.9	0.1	8.6		36.6	26.5 K	9.0		49.9	33.5 K	8.7		44.9	14.7 M
9.2	32	11.2	17.4	9.5		16.6	24.0	7.2	8	5.6	47.7 K	9.5		59.0	22.7	9.0		49.2	43.3 M
9.0		39.8	15.7	10		55.6	30.7	9.8	9	14.3	23.7	9.0	25	4.2	53.6	9.3		53.3	29.5
9.0	33	1.0	49.2	9.8		56.6	10.1	8.9		19.2	41.4 K	9.7		19.0	12.1	9.5		56.8	37.2
9.8		23.3	36.3	8.8	52	1.8	10.8 M	9.2	10	5.6	51.9	9.8	26	0.1	56.0	9.8	43	2.2	15.4
9.3		26.1	55.8	10		27.3	10.1	10		5.8	38.6	9.5		20.8	57.3	9.5		34.2	41.2
8.3		45.6	13.3 K	10		32.1	31.8	8.8		7.3	4.8 K	9.9		53.1	44.5	9.5		43.1	54.0
9.5	34	7.3	22.4	9.9		33.2	37.4	10		14.6	7.8	9.8	27	5.8	59.9	8.4		43.9	24.1 K
9.0		25.9	39.6 K	9.1		51.1	16.7 M	9.0		17.1	18.8 K	9.2		49.7	16.9	9.0		44.4	29.5 K
9.5		32.5	48.9	9.5	53	26.4	51.5	9.8		35.0	54.4	9.8		51.6	22.5	9.6	44	11.2	43.3
9.5		40.4	37.7	8.8		42.7	41.4 K	10		53.0	49.5	9.1		55.1	55.3	10		26.2	3.0
9.5	35	12.9	46.2	9.1		51.8	51.7	9.8	11	17.8	57.2	9.8		59.1	26.0	8.8		47.6	30.0 M
9.5		43.4	53.2 M	9.0		56.7	44.4 K	9.5		26.2	9.5	9.1	28	38.3	1.8	9.1		56.8	19.2 M
8.3	36	0.1	18.0 K	9.3	54	3.6	30.0	7.9		35.8	58.5 K	9.5		46.9	3.7	9.8	45	5.1	54.0
9.1		5.2	5.2 M	9.1	55	22.8	10.4	9.0		43.2	37.5 K	9.1		50.5	42.7 K	9.8		50.7	20.7
9.2		29.0	56.3 M	9.9		37.0	1.9	9.6		56.0	18.8	10	29	9.1	23.8	8.9	47	1.6	32.6 M
8.0	37	32.9	9.0 K	9.8		51.8	11.2	9.1	12	17.5	25.9 M	10		52.6	41.0	9.3		14.1	10.0
9.3	38	20.5	19.1	9.8		56.0	22.2	8.4		22.5	58.2 K	10	30	5.0	44.6	8.2		17.7	14.5 K
9.2		28.2	59.5	6.0		59.5	30.9 K	9.7		27.5	40.9	9.4		6.5	54.6	9.8		35.6	40.2
8.0		31.7	6.2 K	9.2	56	2.3	5.0	9.8		37.0	30.3	9.8		14.1	31.4	9.8		49.6	17.5
9.6		52.6	16.9	9.1		34.2	2.8	8.7		44.3	18.3 K	9.8		24.6	52.0	9.1		51.1	51.9
9.4	39	32.3	19.3	9.6	57	8.4	29.2	9.1	13	11.7	2.4	9.8		39.0	38.9	9.4	48	9.0	41.6
9.7	40	52.5	18.9	8.5		19.2	3.0 K	9.4		32.4	45.1	9.4		44.0	43.1	10		9.8	14.6
9.4		53.2	21.5	8.0		39.6	58.4 K	10	14	2.4	52.5	8.0	31	5.9	7.6 K	9.0		47.1	46.4
9.8	41	2.1	47.5	6.8	58	17.8	17.9 K	9.4		35.9	46.7	10		11.4	2.2	9.9		48.7	7.0
10		57.1	2.2	9.6		21.8	19.8	9.3	15	5.3	20.1	8.4		16.5	26.3 K	9.6		57.0	54.0
9.2	42	2.4	17.2	8.9		47.3	24.1 K	8.9		19.9	22.8 K	9.8		30.0	19.6	8.3	49	59.5	59.8 K
8.7		30.5	20.9	8.9		52.8	57.9 K	9.8		50.4	39.3	9.8		52.0	16.8	9.5	50	8.6	28.5
9.7		37.2	56.5	9.5	59	1.2	19.4	9.4	16	19.1	2.4	9.5	32	13.0	34.7	9.4		9.5	42.3 M
9.2		58.3	55.3	9.3		7.7	59.8	9.6		41.8	59.1	9.5	33	27.4	29.7 M	9.4		33.5	33.1
9.5	43	11.0	46.9	9.3		40.5	32.5	9.4		49.6	14.7	9.5		41.4	9.0	10		35.5	41.2
9.5		11.4	25.0	9.6		43.1	49.5	8.3		51.3	20.0 K	9.7		47.0	59.8	10		44.0	54.5
8.9	44	58.6	55.3 Sj	10		44.6	7.6	9.2		53.9	15.2 K	9.9		56.6	14.1	9.3	51	5.1	8.6
7.0	45	3.7	20.4 K	9.0	0	14.7	10.4 K	9.1	17	1.4	52.5 M	9.7	34	6.6	10.4	8.5		7.5	46.1 L
9.5		24.5	38.5	9.2		16.2	6.1	4.5		17.1	3.4 K	9.8		25.4	17.6	9.3		18.5	49.7 M
7.5		32.8	39.2 K	8.8	1	26.2	24.1	9.5		32.8	45.1	10		34.7	44.3	9.2		44.3	19.8
9.5		53.4	39.5	9.6		35.5	33.3	10		40.9	21.7	9.9		36.9	1.7	9.5	52	1.5	51.9
9.6	46	0.5	5.3	9.7		50.2	37.0	8.7		41.6	24.8 M	9.5		38.1	17.4	9.0		5.0	47.9 K
9.8		1.4	13.9	8.9		50.7	34.6 K	10	18	31.0	4.5	9.8		51.8	20.9	10		34.6	49.7
9.1		23.2	21.6 K	9.3		51.4	55.4 M	9.6		31.8	47.8	8.5	35	3.4	42.8 K	9.3	53	18.3	12.3 M
8.8		26.8	38.1 M	9.8		59.9	4.8	10	19	14.3	55.2	9.5	36	6.3	6.7	9.1		35.9	46.4
9.8		28.6	55.1	7.7	2	3.1	53.1 L	9.5	20	0.0	7.4	9.5		18.3	8.9	10		55.9	44.9
9.1	47	25.0	19.1 M	9.9		19.1	20.4	9.2		9.8	50.1	9.7		22.9	15.3	10	54	45.9	41.9
8.2		26.3	45.7 L	9.0		28.5	32.1 K	10		25.5	1.8	9.9		24.4	25.4	9.5	55	10.5	1.6
8.9		31.3	58.0	9.8		48.3	15.3	9.0		34.5	12.8	9.8		41.3	54.5	9.3		36.5	9.3
9.4		48.7	33.6	8.1		54.9	34.0 K	8.8		35.5	15.8 M	8.8	37	14.7	9.4	10		57.8	10.6
8.3	48	4.9	5.0 K	8.5	3	47.5	28.6 K	9.4	21	14.3	41.3	9.1		24.8	39.9 M	9.5	56	33.4	46.1
8.5		12.9	54.5 K	10		48.6	11.1	9.4		20.0	59.5	9.5		41.5	11.9	9.8		38.8	4.5
9.3		22.4	5.2 M	9.7		54.5	12.7	9.4		31.8	31.4	10		52.3	53.5	9.8		40.4	49.7
9.7		47.6	17.5	9.5		56.4	21.0	8.8		37.8	14.7 K	9.5	38	1.2	40.0	9.9		42.9	50.6
9.0	49	4.4	3.0 M	9.1	4	0.9	11.1	9.5		41.2	55.1	8.9		3.4	39.7 M	8.8	57	18.2	19.3 K
9.5	50	1.4	45.4	9.3		2.0	32.5 Sj	9.8	22	3.8	36.7	8.9	39	1.3	51.8	9.6		39.3	22.7
9.5		14.1	59.7	9.7		11.5	33.8	9.8		6.0	19.3	8.8		36.9	8.6 K	10		41.3	34.6
8.2		15.9	18.5 L	10		22.4	48.2	9.8		29.9	44.5	9.2	40	20.7	53.2	9.5	58	48.8	19.8
9.5		17.5	37.4	9.5		50.1	2.1	9.2	23	28.0	1.6	9.5		28.3	46.3	9.1	59	6.3	50.5

3401—3460

11h—12h —10°

m	m	s	′	
9.4	59	7.8	50.1	
8.6		21.3	52.4	
9.5		30.9	6.1	M
9.7	0	4.3	20.2	
9.0		9.1	17.1	M
9.4		20.8	15.9	
9.4		24.4	12.7	
9.6		44.5	10.0	
9.8		47.7	25.5	
9.8		50.1	19.5	
9.5	1	54.4	6.2	
9.7	2	34.7	16.6	
9.6		36.6	56.5	
9.0		50.7	41.9	
9.5	3	38.2	47.7	
9.6		52.8	15.4	
9.2	4	9.2	29.1	
8.8		25.2	35.6	
9.1		43.7	45.7	K
8.0		58.1	51.0	Sj
9.3	5	4.2	57.7	
9.4		32.9	10.6	
10		39.6	43.7	
9.4		49.6	39.0	
9.9	6	18.6	35.5	
9.4		44.6	42.7	
9.7	7	3.6	47.0	
9.4		24.9	12.2	
9.9		34.1	45.9	
9.5		47.9	11.6	
9.5	8	1.5	36.5	
9.9		11.7	1.4	
9.8		52.0	36.1	
9.3	9	10.1	25.8	
9.8		27.8	54.4	
9.9		29.0	37.4	
9.1	10	16.2	20.7	M
10		19.1	5.5	
10		22.7	41.4	
8.5		23.2	11.9	K
10	11	7.2	11.3	
9.0		43.0	43.4	K
10		45.4	21.3	
10		46.6	0.0	
9.6	12	4.4	55.2	
8.5		21.8	10.4	M
9.0		41.9	35.2	M
9.8		50.5	26.9	
10	13	26.1	1.6	
10		31.0	41.4	
9.2		37.2	6.2	M
8.0		40.4	40.1	K
8.7	14	4.0	58.4	
9.0		7.1	14.9	
8.8		53.6	8.3	M
10	15	5.4	34.4	
8.6		6.4	45.1	K
9.0		14.8	50.4	K
9.2		28.6	50.4	
10		50.1	29.5	

3461—3520

12h —10°

m	m	s	′	
9.8	15	52.9	30.8	
9.5	16	32.0	1.9	
9.5		35.4	46.6	
9.5	17	37.3	29.9	
9.5		38.4	32.8	
9.8		40.4	57.9	
6.0		43.9	48.2	K
9.1		53.3	17.3	
9.0	18	38.5	1.0	M
10		52.0	35.9	
9.5		54.0	34.3	M
9.9	19	3.8	28.8	
9.4	20	7.6	17.9	
8.9		9.2	55.0	M
9.5		18.2	24.1	
9.5		42.7	30.1	
9.5	21	1.5	12.2	
8.2		8.1	13.2	Sj
9.8		25.3	42.5	
9.1		53.8	28.8	
9.5	22	31.2	27.0	
9.5		32.4	50.0	M
9.2		46.7	27.3	
9.8	23	16.6	33.2	
9.9		18.1	20.5	
8.0	24	6.9	16.6	K
7.5		7.6	16.2	K
9.1		21.2	54.1	
9.4		31.0	58.0	
9.3		35.1	31.7	
9.9	25	2.2	19.5	
9.9		4.7	37.9	
8.3		40.9	19.9	K
8.2	26	6.7	49.2	K
10		19.8	47.1	
9.0		41.5	39.1	K
9.0		49.0	4.9	
10		52.1	41.8	
9.1	27	15.0	38.4	
9.2		17.4	58.8	K
9.8		24.5	18.0	
10		39.9	5.4	
9.5		41.6	23.4	
8.9		43.5	35.7	M
9.5		50.4	4.5	
10	28	25.6	39.7	
10		59.1	19.4	
10		59.9	18.0	
9.3	29	30.0	28.3	
9.0	30	42.0	33.0	
9.0		48.5	43.0	K
8.0		49.5	43.0	K
9.0		57.5	43.7	K
9.2		59.5	39.0	
9.0	31	3.7	44.3	K
9.5		4.0	33.4	
9.5		6.5	31.4	
9.8		15.0	0.0	
9.7		16.5	27.0	
9.5		21.0	25.5	

3521—3580

12h —10°

m	m	s	′	
9.4	31	54.9	52.7	
9.1		58.4	22.3	M
9.0	32	8.9	1.8	M
9.5		14.2	51.1	
8eb		27.5	49.7	
9.5		37.3	40.3	
9.1		44.9	55.4	M
9.5	33	2.4	14.0	
9.8		21.8	6.5	
9.5		24.7	43.5	
9.4		26.9	44.1	
9.5		30.9	17.8	
8.7		34.9	46.8	K
8.7	34	14.4	47.5	B
8.7		39.9	23.6	K
9.7		45.7	14.3	
9.8		45.9	43.2	
9.9		59.4	25.4	
9.6	35	4.9	57.2	
9.6		15.7	21.1	
9.9		37.4	8.2	
9.9		49.3	5.4	
9.8	36	10.6	27.9	
8.5		52.8	31.6	K
9.1	37	22.8	0.0	
8.2		32.3	12.2	Sj
9.8		45.1	49.3	
9.8		53.8	22.7	
8.5	39	41.7	40.9	M
9.7		57.6	17.3	
9.3	40	2.3	53.4	
9.5		11.3	2.7	
9.5		34.2	37.5	
8.7		43.2	11.0	K
9.4	41	35.2	8.6	
10		58.2	22.3	
9.8	42	32.7	1.9	
9.4	43	27.2	23.9	
8.7		36.7	28.8	M
10		47.4	54.4	
10	44	18.6	19.7	
9.3	45	43.1	43.6	
8.7		46.6	8.0	K
9.5		53.6	1.2	
9.2		56.1	37.5	
9.8	46	27.0	0.4	
9.4		31.1	36.0	M
9.8		32.6	46.1	
9.6		40.5	14.8	
6.0		45.6	51.5	Sj
10		47.9	33.5	
9.8		48.6	43.3	
9.8	47	12.6	27.1	
10		14.1	31.5	
9.6		24.0	27.1	
8.9	48	2.3	40.8	Sj
9.7		8.1	8.9	
8.8		29.3	31.4	K
9.8	49	6.0	18.9	
9.6		16.2	28.0	

3581—3640

12h—13h —10°

m	m	s	′	
8.5	49	24.0	5.7	K
9.4		54.9	19.6	
9.2	50	12.8	29.0	
9.2		31.1	59.4	M
9.6	51	16.3	39.5	
9.2		17.3	43.0	M
10		26.5	3.9	
9.3		45.8	39.5	
9.1		56.8	45.8	K
9.7	52	37.2	28.2	
9.4	53	5.7	34.3	
8.3		49.2	22.6	K
9.8	54	8.9	0.8	
9.5		18.2	50.7	
10		22.9	11.1	
9.8		56.4	12.6	
9.8	55	8.6	37.1	
10		18.5	2.2	
8.0	56	3.2	47.6	Sj
8.9		21.4	11.1	K
8.8		48.2	55.1	M
9.5	57	38.1	24.8	
9.7		44.3	37.5	
10	58	1.2	22.0	
9.2		2.4	25.4	
9.1		5.7	45.0	M
9.5		10.1	29.0	
8.9		27.0	14.9	K
9.5		57.3	7.3	
9.2	59	12.6	58.1	K
9.1		35.4	50.6	K
9.3		35.6	4.4	
9.6		54.7	25.5	
9.1		58.0	37.2	M
7.3	0	52.0	59.0	Sj
9.6		54.3	13.7	
10	1	8.8	29.1	
9.5		34.6	30.4	
10		38.4	9.6	
9.7		49.5	57.3	
9.1		51.0	23.0	M
9.4	2	5.2	58.6	
9.5		16.6	53.4	
8.2		57.2	2.5	K
9.0	3	41.4	20.1	Sj
9.6		52.9	10.7	M
7.0	4	5.0	26.9	B
9.8		33.9	55.5	
9.3		50.0	14.8	M
8.5	5	4.3	48.3	K
9.2		4.5	41.2	K
10		28.6	29.7	
8.9	6	15.5	47.0	Sj
9.6	7	8.5	16.9	M
7.5		20.3	35.5	B
8.6		23.8	34.4	K
9.8		52.8	25.8	
9.1		58.5	14.7	M
9.5		59.9	46.4	
9.6	8	2.8	1.4	

3641—3700

13h —10°

m	m	s	′	
8.7	8	20.4	28.5	K
9.4		50.3	59.5	
9.5	9	16.2	1.8	
6.8		44.9	43.0	K
9.8	10	14.0	59.9	
9.6		25.7	4.0	
9.4		34.3	3.5	
9.5		38.4	16.1	
9.3		45.4	45.8	
9.3		50.3	51.8	
8.5	11	48.8	23.0	Sj
7.7	12	7.4	54.8	K
9.5		13.4	33.3	
9.4		25.8	35.5	
6.8		43.3	32.4	K
8.9	13	7.3	41.3	M
9.3		9.6	3.6	
10		20.4	32.7	
9.8		21.1	18.4	
8.0		57.6	59.2	K
9.6	14	2.0	14.6	
10		18.6	19.9	
9.0		37.4	51.5	
10		39.0	41.6	
9.7		46.5	46.3	
9.1	15	31.8	37.9	
8.6		41.3	17.0	L
9.5		49.7	49.2	
9.4		50.2	35.1	
8.0	16	19.6	6.8	K
9.5		34.6	0.2	
1	17	33.0	24.1	K
9.8		57.3	6.6	
9.5	18	5.3	32.9	
9.7		26.6	0.6	
9.6		58.0	22.5	
8.8	19	20.8	34.8	
9.8		40.1	18.5	
9.4		56.8	10.1	
9.0	20	33.7	1.4	
8.8		39.1	17.4	M
9.5		44.7	52.8	
9.2		48.8	10.6	
9.6		54.3	1.2	
9.3		56.8	21.5	M
10	21	20.6	15.1	
9.9		51.5	1.1	
9.3		51.6	11.3	
9.0	22	15.2	44.8	M
9.5		27.7	33.8	
9.3		56.2	6.7	
9.8	23	1.6	20.0	
9.5		18.7	33.8	
9.7		37.2	0.3	
8.8		47.0	17.7	M
9.5		51.6	54.2	
9.4	24	21.2	16.6	
9.5		26.5	27.7	
8.8		26.7	30.2	Sj
9.8		29.6	2.0	

3701—3760				3761—3820				3821—3880				3881—3940				3941—4000			
13h		−10°		13h		−10°		13h–14h		−10°		14h		−10°		14h		−10°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.7	24 55.0	15.2		8.8	40 49.4	34.6	B	9.6	58 37.0	35.3		9.8	13 32.2	33.1		8.0	33 29.7	44.4	Sj
10	25 40.5	15.0		9.7	41 44.3	59.0		10		55.8	23.8	8.0	14 4.2	0.0	K	9.8		42.7	33.4	
9.3		57.1	41.8	9.5	42 2.8	14.7		7.8		56.9	48.6	L	9.6		41.0	46.0		8.5		51.5	13.4	K
8.8	26 10.2	24.5	K	9.2		7.6	17.3	B	9.1	59 10.3	12.2	M	9.1	15 2.1	14.4		9.8		57.8	44.8	
7.8		38.1	47.2	K	8.9		51.3	3.1	M	10		42.8	29.6		9.8		4.0	42.3		9.7	34 7.2	19.5	
9.8		53.1	4.8		10		52.0	10.8		8.5	0 8.2		27.9	B	10		4.7	3.6		9.7		39.2	44.7	
9.5	27 1.6	50.2		9.5		54.8	55.1		9.6		25.7	54.2		9.3		8.8	9.5		8.6	35 16.9	13.3	K
9.8		22.5	27.4	7.5	43 6.7	38.2	B	9.0		46.1	31.6	B	8.0		11.2	5.0	M	10	36 40.4	8.2	
10		25.4	46.5	8.8		15.7	42.1	K	9.0	1 2.4		52.5	K	9.8		57.6	55.4		9.6		44.7	47.5	
9.3		26.0	17.8	10	44 9.0		48.4		9.7		5.8	21.6		9.5	16 28.7		8.5		8.5	37 2.1	15.1	K
9.8		49.6	6.4	9.5		21.7	54.8		10		8.7	51.0		9.0		47.7	26.4	B	9.0		3.3	36.6	K
8.8		50.5	9.5	K	9.0		27.6	13.3	M	9.8		12.5	1.7		9.2		49.2	19.5	K	9.8		11.8	13.3	
9.5		54.0	15.5		9.5		30.7	45.2		9.9		54.4	15.3		10	17 3.5		2.2		9.6		15.9	3.3	
9.4	28 0.7	28.1			9.8		38.8	1.5		10		56.8	20.2		9.8		7.0	46.2		9.4		18.1	23.4	
8.9		29.9	55.3		9.7	45 2.2		54.0		9.2		56.9	23.3	M	9.8		11.6	27.9		9.3		31.6	29.6	M
8.6		33.1	41.2	Sj	9.8		57.2	57.1		9.3	2 23.8		39.1	M	9.9		25.9	51.5		8.5		48.7	48.2	Sj
10	29 1.4	34.0			9.6	46 4.7		2.4		8.6		48.9	42.0	K	9.9		34.6	26.6	B	8.9		52.9	42.2	K
8.9		16.8	9.6	M	7.2		24.5	58.7	K	9.1		54.8	57.4	K	9.6		47.7	58.1		9.0	38 29.1		28.8	L
9.3		32.0	32.2		9.0		34.6	10.7		9.5	3 5.3		24.4		9.9	18 40.1		5.8		9.8		38.0	54.8	
9.5		51.6	11.3		10		39.2	4.2		9.6		6.4	36.6		8.8		50.4	58.4	K	9.8		45.5	55.5	
8.5		56.0	3.3	K	9.5	47 32.1		43.1		9.8		29.3	26.4		9.5		56.6	36.6		9.0	39 14.7		56.5	Sj
10	30 29.4	9.1			9.5		48.2	59.7		9.5	4 4.2		17.6		9.5	19 8.2		0.2		8.1		15.4	45.3	K
10		33.5	7.0		9.4		57.6	44.7		9.5		37.3	43.9		10		18.6	8.3		9.4	40 0.1		41.0	
8.5		49.1	21.3	K	9.5	48 10.6		53.4		9.5		43.3	29.7		8.5	20 0.4		40.2	Sj	9.1		2.4	56.3	K
9.1	31 0.5	44.2	K		9.5		51.8	18.1	B	9.8		54.2	56.0		9.6		10.6	23.2		9.1		31.0	23.4	K
9.1		11.0	9.5		8.7	49 5.2		3.5	Sj	9.8	5 2.8		25.9		9.4		21.0	54.8		9.5	41 13.3		4.7	
9.2		21.8	41.1	M	9.5		46.6	52.8		9.5		9.3	16.8		9.0		55.6	31.0	M	7.7		21.4	13.0	K
8.5		38.5	19.5	K	9.8		51.7	24.2		9.2		36.0	24.9		9.4		56.4	24.8		9.8		26.7	57.2	
9.8	32 5.8	28.7			9.4		58.5	55.6		9.3		38.3	24.0		9.8	21 7.6		26.8		10		29.6	43.0	
9.0	33 31.4	33.7	K	8.4	50 2.2		12.7	K	9.5		41.3	17.8		9.0		44.3	7.4		9.4		41.5	22.7	
9.4		37.9	35.3		8.0		3.6	49.7	Sj	9.6	6 5.0		56.7		10	22 25.0		7.9		9.8		52.0	30.4	
9.8		56.3	38.8		9.8		6.6	16.0		9.6		6.8	42.1		9.4		27.0	32.2		9.4	42 34.8		53.3	
9.8		58.3	35.0		9.7		11.7	1.0		10		34.9	5.0		10		29.6	6.3		9.3	43 19.7		19.3	M
9.3	34 11.9	8.5			9.1		42.4	26.8	K	10	7 10.4		33.9		9.8		46.6	17.2		9.8		52.9	36.5	
10		23.3	29.2		9.5	51 9.6		29.4		10		13.2	38.9		9.7	23 25.9		44.2		9.1	44 7.5		44.3	
10		57.4	4.0		9.1		40.6	1.5	K	9.5		26.4	8.3		9.8		57.5	27.8		8.0		30.2	52.4	K
10	35 10.2	37.2			9.5		45.6	27.2		9.4		37.2	43.4		9.6		59.0	25.9	M	8.2		37.0	36.1	K
8.0		16.5	33.7	Sj	9.7	52 20.2		13.8		9.5		53.9	1.8		9.3	24 4.7		35.2		9.3	45 29.0		22.9	
9.5		38.0	35.8		9.5	53 2.2		43.7		9.5		58.6	48.2		9.4		21.4	16.0		9.8		36.5	6.4	
9.5		43.5	36.2		9.0		17.0	36.1	K	9.6	8 10.5		13.6		8.2		24.9	17.4	K	9.8		44.7	41.2	
10		47.9	4.5		9.8		55.9	20.9		9.2		11.0	31.9	K	9.1		33.1	22.0	K	9.5	46 23.0		14.4	
9.5		59.4	42.5		8.8	54 8.0		46.1	Sj	9.6		18.1	3.4		9.5	25 18.3		5.0		9.2		31.6	14.3	K
8.0	36 32.9	42.3	K		9.6		12.3	2.0		9.7		58.2	18.3		9.3		40.7	0.0	M	9.8	47 52.4		32.9	
9.1		38.5	26.3	M	9.5		32.1	29.1		10	9 12.1		48.9		9.2	26 27.7		15.3	M	9.2	48 9.6		13.9	M
9.4	37 4.9	4.3	M		8.5		35.8	22.7	K	9.2		25.5	58.9	B	9.0		29.9	32.3		9.5		9.7	20.7	
9.3		53.8	45.5		9.5		40.8	34.5		9.1		36.5	55.7	K	9.0		36.0	21.5	K	9.8		41.4	30.0	
9.8		54.9	32.1		9.5		41.3	38.2		9.4	10 0.3		5.5		8.8		57.0	14.0	Sj	9.2		45.3	17.7	M
8.0	38 10.8	29.7	K		9.5		43.7	53.7		10		30.6	37.4		8.7	27 18.9		53.5	K	9.3		48.0	46.0	
10		28.4	3.4		9.8		55.3	55.0		9.3		32.2	7.6		9.7		29.3	54.5		5.5		54.4	49.1	Sj
9.8		41.3	28.5		7.8	55 43.9		16.2	L	9.7	11 28.3		33.1		10		53.1	1.8		9.0	49 11.6		55.4	K
9.2	39 13.8	41.2			7.7		48.1	1.6	K	10		30.5	54.3		9.5		58.3	45.9		9.3	50 13.4		49.6	M
9.5		22.9	24.7		8.3	56 10.0		34.3	K	9.8		48.2	34.5		9.0	28 39.3		27.5	M	9.0		17.9	44.8	Sj
9.0	40 8.6	33.3	Sj		9.0		38.4	47.7	B	9.8		51.6	12.8		9.3	29 43.3		15.0		9.3		22.9	45.9	K
9.5		11.1	2.0		10	57 28.5		10.4		10	12 2.5		59.2		9.8	30 21.7		55.5		7.0		22.9	34.2	K
9.4		14.3	4.1		10		34.4	14.0		9.5		20.6	37.3		9.5		48.2	55.6		9.5		23.3	54.9	
8.9		20.5	45.5	K	9.9		41.0	6.4		9.4		23.3	23.5		8.5	31 26.2		58.0	Sj	9.3		37.2	2.8	
10		23.5	32.3		9.3		43.5	46.9		9.4		24.8	19.2		9.5		37.7	24.8		8.7		41.4	23.9	K
10		26.1	45.8		9.9		48.3	59.8		9.6		45.1	19.7		9.8		42.8	37.1		10		44.0	7.9	
8.5		30.7	3.4	M	9.1		48.4	47.4	M	9.4	13 27.8		12.9		10	32 43.5		55.4		6.2	51 3.4		33.4	K
9.4		47.9	25.7		9.1	58 17.2		54.0	M	7.8		29.6	43.9	K	9.0	33 12.5		6.1	M	10		6.7	47.8	

3721: 55°30 3′26″.4 B_8, Ep. 1873.40 3999: 3°28 33′28″.8 B_4, Ep. 1872.90

4001—4060

	14h—15h	—10°	
m	m s	′	
9.2	51 20.6	53.2	M
9.4	48.2	1.7	
9.2	49.8	3.1	M
9.3	53.4	58.8	M
9.3	54.6	19.8	
9.2	52 1.5	36.6	K
7.5	2.2	20.6	Sj
9.5	5.3	6.5	
9.8	46.3	37.8	
9.2	46.6	6.4	M
9.3	52.8	32.7	B
9.1	53 5.2	15.5	M
9.1	59.9	31.2	
10	54 35.1	47.1	
9.8	47.4	39.8	
9.3	55.8	7.4	M
9.2	55 11.7	56.7	M
9.5	38.1	40.5	
8.0	56 2.2	25.9	K
10	13.4	56.8	
8.6	25.7	27.2	K
9.7	44.8	17.3	
10	45.8	57.4	
9.8	57 24.7	21.9	
10	33.6	56.4	
8.9	35.2	1.6	M
9.8	58 4.3	56.7	
10	6.1	12.3	
8.7	14.0	38.0	K
9.0	20.7	9.8	K
9.7	25.8	42.5	
9.4	36.0	37.1	M
10	42.7	42.5	
9.7	43.4	58.3	
9.6	50.6	39.9	M
9.4	59 9.8	54.3	
9.8	46.7	29.1	
9.8	51.6	28.4	
9.5	0 10.6	34.2	
9.3	28.0	9.4	
9.5	32.7	25.3	
9.8	1 19.6	48.1	
9.8	2 5.5	4.3	
8.5	6.2	42.4	K
9.0	52.6	22.0	M
9.8	53.8	55.0	
9.8	3 10.7	26.2	
9.3	15.5	4.1	
7.8	27.3	55.2	K
8.7	29.1	30.5	L
9.7	4 18.0	15.6	
9.8	26.5	5.5	
9.8	36.6	22.7	
10	51.9	55.0	
7.0	5 23.1	27.6	K
9.4	28.8	54.6	
9.3	36.2	38.6	M
10	6 28.1	57.0	
9.8	39.9	4.5	
10	52.6	32.7	

4061—4120

	15h	—10°	
m	m s	′	
9.2	7 24.5	1.6	K
10	28.6	23.3	
8.5	30.2	54.8	K
10	36.0	2.5	
9.0	51.2	8.0	K
9.8	51.5	25.7	
8.5	8 14.5	3.2	K
9.5	50.5	24.1	
9.3	51.3	29.2	M
9.6	53.0	25.7	
9.2	9 1.6	28.6	
8.9	28.5	41.8	
9.5	10 3.6	51.0	
8.7	10.0	30.0	K
9.3	43.8	56.6	
9.6	11 5.0	33.4	
10	10.5	1.4	
10	22.0	7.2	
9.5	24.4	18.7	
8.7	26.5	39.2	L
9.5	30.0	24.9	
9.5	48.4	6.3	
8.9	58.0	38.7	L
8.6	12 17.6	37.4	L
8.3	37.9	30.0	L
9.1	13 24.6	12.6	
8.1	41.4	57.5	Sj
8.0	14 44.9	7.6	P
9.4	47.8	39.5	
8.0	53.0	41.0	K
9.4	15 0.9	23.6	
8.5	11.8	55.9	K
9.4	17.4	44.5	
9.6	57.7	30.9	
8.8	16 38.3	20.6	
9.2	38.5	31.3	
9.2	56.4	14.1	
7.8	17 19.3	28.4	Sj
9.1	21.3	37.0	
9.5	33.9	2.7	
9.8	41.4	14.1	
9.2	18 0.5	16.0	
9.1	5.6	37.9	K
9.5	6.5	0.6	
9.8	19 24.8	14.0	
9.1	31.8	54.9	
7.5	37.7	26.9	Sj
7.5	20 18.3	56.7	K
9.9	41.6	49.8	
10	21 6.4	21.1	
10	9.8	7.7	
9.7	11.3	10.4	
9.5	22.6	28.1	
9.5	23.8	9.6	
9.5	22 16.3	44.3	
9.8	39.9	18.1	
9.7	42.8	21.5	
9.4	59.1	59.8	
8.1	23 43.2	45.0	Sj
9.2	50.2	40.8	

4121—4180

	15h	—10°	
m	m s	′	
9.1	24 44.2	41.4	
8.5	25 39.3	34.6	B
9.6	46.7	3.4	
9.6	26 48.5	21.0	
8.9	27 3.4	2.3	K
9.2	51.2	51.5	M
9.5	28 28.2	56.5	
9.3	44.4	57.7	
9.8	58.2	8.7	
9.3	29 7.1	34.6	
9.6	18.6	9.5	
9.0	24.4	7.5	K
9.6	26.2	40.0	
9.4	35.2	9.8	
9.9	30 16.2	10.8	
9.4	34.8	19.0	M
10	48.3	19.3	
9.5	31 18.0	48.4	
9.7	37.9	22.6	
8.8	41.8	32.3	K
9.1	32 14.7	2.7	
9.5	34.4	9.7	
8.5	37.0	24.6	K
9.5	53.8	18.5	
9.0	34 2.6	50.6	K
8.3	5.1	40.3	K
10	44.2	13.1	
9.4	35 1.0	58.4	
7.0	17.0	27.7	L
10	34.1	8.8	
9.9	36.1	17.7	
9.5	45.6	55.7	
9.8	36 2.6	14.9	
8.4	5.5	23.0	L
8.8	6.2	46.7	
10	17.3	22.2	
9.9	21.1	55.1	
9.6	33.6	6.9	
9.6	35.3	57.4	
9.5	37 45.7	2.8	
9.6	51.5	30.6	
9.2	38 39.6	52.3	
9.9	45.0	35.8	
9.5	39 7.6	53.4	
9.1	15.4	10.1	
9.9	55.0	14.9	
10	40 13.9	45.4	
9.4	58.4	32.9	
9.7	41 9.7	11.3	
9.5	22.4	36.6	
9.7	36.3	16.2	
9.0	38.4	23.6	
9.3	42 2.5	51.4	
8.6	4.4	36.7	
9.5	7.6	52.5	
8.7	51.7	16.6	K
9.6	43 1.5	54.2	
8.0	2.2	32.8	K
9.0	34.9	24.7	K
8.9	46.5	42.6	K

4181—4240

	15h	—10°	
m	m s	′	
9.4	43 52.0	41.7	
9.4	44 20.8	22.5	
9.4	23.4	41.7	
9.2	27.9	27.7	
9.7	40.3	19.6	
9.4	45 3.7	23.5	
9.3	10.0	51.1	
9.1	16.5	5.2	
9.5	26.9	48.8	
10	41.0	55.3	
9.0	44.9	7.3	
9.0	59.0	13.1	M
8.9	46 0.5	55.0	
10	9.8	24.7	
6.8	16.8	39.4	Sj
9.8	17.2	9.8	
9.2	19.3	29.5	
9.7	38.8	10.6	
10	41.8	3.8	
10	47 17.4	51.9	
9.5	25.8	40.2	
9.6	29.5	37.6	
9.6	31.1	4.8	
9.0	48.3	31.4	
9.5	48 26.7	25.6	
8.5	34.7	40.3	
8.5	42.3	33.1	Sj
10	48.3	47.6	
8.9	49 4.7	37.1	
9.7	5.4	2.7	
7.5	11.7	27.6	B
10	23.9	5.5	
9.8	35.9	14.4	
9.0	51.9	42.2	
9.8	56.8	32.2	
8.0	51 15.8	31.6	Sj
8.9	38.3	51.3	K
9.2	39.7	23.9	
9.0	45.2	23.4	M
9.2	52 6.3	10.0	
9.6	53 3.5	19.1	
9.8	14.5	6.6	
9.4	20.3	53.6	
9.4	22.8	31.9	
9.7	35.3	56.9	
8.5	35.9	51.8	K
8.6	54 2.6	53.0	K
9.8	4.6	42.9	
9.3	18.7	17.5	
9.0	51.7	13.3	
9.5	55 1.1	18.6	
10	12.0	56.3	
9.0	28.0	58.0	
9.3	50.6	54.3	
9.2	56 1.8	49.2	
9.5	22.8	51.4	
4.4	24.5	57.8	Sj
9.8	25.7	19.7	
9.6	55.6	41.9	
9.6	57 0.9	33.6	

4241—4300

	15h—16h	—10°	
m	m s	′	
8.6	57 4.0	49.2	
8.7	49.0	24.3	
9.1	58 14.2	35.9	
9.0	14.8	28.8	
9.9	18.7	55.2	
9.0	43.5	7.9	
9.8	45.4	0.4	
9.4	47.0	18.1	
10	59 0.9	3.2	
10	5.7	0.0	
9.1	7.6	47.0	
9.0	48.1	4.2	
9.3	0 20.7	16.8	
9.4	59.3	13.9	
8.2	1 11.8	33.4	
9.4	17.6	27.3	
9.8	46.0	32.5	
8.0	52.4	45.1	K
9.6	2 17.7	8.4	
10	18.9	23.8	
9.8	33.8	45.3	
9.6	48.7	9.6	
9.5	3 13.5	15.8	
8.3	32.9	52.9	
8.7	4 0.6	14.7	B
8.8	2.9	22.9	
8.0	21.8	49.3	K
8.5	31.4	6.6	K
9.5	5 5.3	44.5	
9.9	21.3	54.3	
9.7	30.7	21.7	
9.6	30.9	27.8	
9.5	49.9	12.9	
9.2	50.6	12.1	K
9.4	6 11.4	40.0	
7.7	20.0	2.6	K
9.0	30.3	50.5	
8.3	35.6	17.5	K
9.6	7 12.8	46.0	
7.5	27.6	40.2	K
9.1	43.0	27.3	
9.7	8 21.4	18.3	
10	29.4	11.8	
9.9	36.7	20.3	
9.9	38.6	39.9	
9.5	41.0	19.8	
9.4	54.8	17.3	
9.4	9 38.9	19.2	
9.8	10 12.6	55.7	
9.7	41.5	43.8	
8.7	44.3	56.0	K
9.0	51.4	25.7	K
9.5	58.8	38.2	
9.4	11 33.8	38.2	
9.6	12 16.5	16.9	
9.1	36.4	23.5	
8.9	49.3	50.7	
9.8	13 12.3	42.7	
9.5	16.4	11.7	
9.0	21.8	31.7	

4301—4360				4361—4420				4421—4480				4481—4540				4541—4600			
	16h		−10°		16h		−10°		16h—17h		−10°		17h		−10°		17h		−10°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.5	13	29.2	50.5	9.8	31	15.2	50.4	9.8	51	58.1	56.8	9.4	14	17.9	28.6	9.3	35	30.4	54.7	
8.8		36.9	6.0	9.8		37.9	12.4	9.9	52	29.3	44.6	9.1		49.3	32.2	K	9.4		32.1	48.0	
9.5		41.8	26.7	9.6		47.9	15.6	8.3		33.7	51.2	K	9.8		55.5	28.6		9.5	36	22.0	3.9	
9.5		59.4	5.5	9.7		51.6	40.4	10		41.5	29.4		8.9	15	9.4	16.0	K	9.4		23.2	43.7	
7.9	14	35.2	58.9	L	10		56.8	28.0	7.8	54	22.4	44.4	K	9.2		28.8	31.9	M	7.6		34.1	16.0	K
9.1		48.1	55.3	9.2	32	34.2	41.8	9.3		44.7	19.2		9.6		36.8	20.4		7.0	37	49.7	17.0	K
9.4	15	9.4	23.0	9.7		55.3	24.2	9.8		58.3	32.2		9.5	16	42.7	35.4		9.4	38	59.8	43.5	
9.0		57.9	41.6	K	9.6	33	13.4	34.1	9.8	55	9.1	57.8	9.4	17	1.0	56.0		9.7	39	17.7	18.8	
7.8	16	5.1	41.2	K	9.8		45.6	17.5	9.5		12.2	45.6	10		22.0	19.4		9.4		25.6	52.3	
9.5		9.3	55.4	9.7		48.2	37.3	9.5		21.3	12.3	9.5		31.5	15.0		9.3		46.7	33.4	
9.0		13.8	52.6	9.6	34	1.7	58.9	9.6		23.5	6.2	10		36.1	24.7		9.5		47.1	17.3	
9.5		34.6	37.6	9.8		13.2	51.8	9.8	56	1.2	44.7	9.1	18	11.8	34.5		9.5	40	1.0	34.4	
10	17	0.0	31.8	7.1		34.8	53.2	K	9.6		4.5	25.4	7.5		14.7	51.7	K	7.8		37.7	13.1	Sj
9.4		4.9	25.9	9.3		54.4	10.5	9.8		5.5	42.7	9.4		28.6	17.0		8.9	41	25.3	43.3	M
9.8	18	34.8	40.9	10	35	10.8	10.2	9.4		25.2	56.6	9.7	19	18.3	18.0		9.8		26.4	15.6	
9.5		56.4	42.8	9.4		33.6	56.9	7.0		32.3	52.4	Sj	9.3		38.8	38.3		8.8		37.6	53.7	
9.2	19	5.3	49.4	9.4		35.7	5.1	9.4		38.8	33.5	8.9		55.6	18.3	K	8.4		45.0	25.4	K
9.5		18.9	42.9	9.8	36	0.3	15.8	9.8	57	31.9	1.6	9.3	20	10.0	54.7		9.9		55.2	50.8	
9.0		20.9	27.4	9.8		7.1	47.1	9.5	58	10.0	26.6	9.2		40.3	24.2	R	9.5	43	44.0	4.7	
8.5		46.8	51.4	K	9.7		24.6	57.9	7.8		28.4	36.2	L	9.9		52.2	14.1		6.5	44	59.2	51.6	B
9.6		57.4	23.3	10		48.7	12.2	9.2		42.1	22.3	8.8	21	8.6	39.5	K	7.8	45	10.0	19.8	B
8.3	20	55.5	0.8	Sj	9.6	37	1.1	21.9	8.8	59	31.9	38.8	K	9.7		14.1	25.4		9.7		44.7	15.8	
9.5	21	22.3	52.3	7.8		22.2	23.5	K	9.5	0	7.7	47.4	9.2	22	19.9	14.4	K	10	46	16.7	15.0	
9.0		27.2	53.7	K	8.2		34.9	39.2	K	9.5	1	16.9	42.5	9.2		23.9	48.8	K	9.1	47	58.3	21.7	
10		37.8	33.4	10	38	7.1	38.6	6.1		47.6	19.7	K	9.7		42.6	44.8		8.5	48	26.8	9.4	B
9.8		41.8	8.0	9.5		31.7	11.1	9.0	2	13.8	47.0	9.2		51.5	46.8	K	9.8		50.5	7.1	
7.0		49.5	48.2	K	9.5		52.3	23.7	8.4		33.5	41.3	Sj	7.7	23	15.0	51.1	K	9.5		51.4	2.0	
9.5	22	8.3	48.0	8.3		56.1	52.4	K	9.6	3	12.1	13.9	10		25.8	35.8		9.7		52.0	18.7	
7.5		28.4	7.1	K	9.2	39	27.7	58.6	8.6		38.4	27.1	K	9.3		28.5	12.7		9.0	49	3.5	55.9	
9.5		39.4	24.0	8.7		34.1	15.5	K	9.4		48.0	14.6	9.4		28.9	1.0		9.1		48.7	20.4	
8.7		43.4	20.0	9.5		45.7	6.6	9.9	4	11.5	17.7	9.2		36.3	3.4		9.5		52.3	14.0	
8.7		49.1	29.1	K	9.1	40	16.6	2.8	9.2		29.9	37.7	8.1		52.9	20.5	K	9.5	50	17.4	35.5	
9.9	23	17.8	24.4	9.4	41	35.0	10.2	7.8		30.5	5.9	K	9.8		55.7	56.8		9.7	51	6.9	8.8	
9.5	24	35.4	9.6	5.1		49.4	31.1	K	9.5		33.1	7.1	8.7	24	6.1	36.5	K	9.5		11.5	34.0	
9.8		47.9	54.0	9.1		53.8	55.4	9.3		50.3	34.3	9.7		22.4	13.9		10		57.8	42.6	
6.9		57.4	15.0	K	9.2	42	11.1	24.7	8.5	5	0.5	30.4	Sj	10		47.9	35.7		9.8	52	19.8	4.8	
9.8	25	37.8	53.7	9.7		17.5	45.4	10		1.8	24.3	9.3		48.4	8.8		9.3		32.2	53.7	
8.5		52.2	27.1	K	9.8	43	4.4	23.1	9.1		19.8	10.4	9.3	25	18.1	18.6		9.6		34.1	26.4	
8.0	26	10.0	22.2	K	9.1		52.3	23.1	9.4		30.9	1.1	9.5		32.0	52.8		9.5		43.5	19.8	
8.4		12.9	11.0	K	9.8		59.8	2.7	9.0		33.8	5.4	9.1		54.3	55.8	K	9.0		49.5	55.9	
9.8		15.0	32.5	9.5	44	47.9	15.4	9.1	6	7.8	41.5	9.8	26	54.7	35.2		9.0		54.5	11.2	M
9.7		15.1	52.4	9.7		49.3	57.2	7.5	7	34.4	7.7	K	9.2	27	50.2	13.7		9.8	53	0.3	19.5	
8.9		18.4	3.6	K	8.3	45	32.5	30.8	Sj	9.3	8	8.8	43.2	9.5	28	1.7	51.7		7.6		30.2	13.2	K
9.5		23.6	18.8	9.7		37.7	39.1	8.3		56.0	44.0	M	9.9		3.9	42.7		9.2		32.8	15.9	
9.4		57.8	57.1	9.5	46	4.0	57.2	8.2	9	1.1	30.0	L	9.4		38.5	56.1		9.4		42.3	47.9	
10	27	11.9	46.0	10		51.4	18.2	9.3		11.1	37.0	9.5	29	11.7	17.4		9.2	54	11.7	11.5	
9.4		53.3	47.1	9.4	47	5.7	57.4	8.6		25.4	41.1	L	10		52.9	16.0		9.0		19.5	30.3	
9.5	28	20.6	15.0	9.4		15.5	37.8	9.0		57.5	12.0	6.5	30	6.8	49.9	Sj	8.3		24.8	6.5	Sj
9.8	29	6.0	25.7	9.0		30.6	10.6	9.2	10	4.0	58.2	9.8		38.5	59.0		9.8		55.3	9.3	
3		11.0	10.3	K	9.4		33.7	58.8	7.3		40.5	3.4	K	8.7		51.8	47.7	M	8.4	55	2.6	25.5	K
9.3		23.4	5.0	9.5		50.1	3.0	9.3	11	8.7	58.3	9.4	31	0.0	48.3		9.8		7.8	15.2	
9.6		25.3	27.2	10	48	40.7	20.6	9.7		12.8	29.4	8.8		18.8	37.0	K	8.9		12.2	51.7	K
9.2		45.9	53.2	8.7		43.1	43.1	K	9.8		21.0	29.2	9.3		26.5	23.5		9.8		16.3	18.7	
8.7	30	37.6	33.4	K	9.7		52.6	56.9	9.6		40.3	8.9	9.1	32	11.4	33.6	M	9.5		28.7	26.5	
9.4		39.0	44.7	9.8	49	16.2	55.7	9.8	12	4.7	58.5	9.5		37.8	45.1		9.4		34.0	16.1	
10		41.2	11.8	9.7		20.6	10.0	8.7		7.8	32.9	K	9.4	33	21.2	12.4		9.6		57.7	16.0	
9.4		48.3	36.1	6.8		25.1	43.8	K	6.7		50.8	32.6	K	9.0		31.1	14.8		9.4	56	1.1	53.3	
9.0		51.3	9.2	K	8.0	50	12.5	18.8	K	9.2	13	8.3	58.1	10	34	3.7	56.6		7.4		17.0	54.5	Sj
9.7	31	0.6	40.7	10		32.9	54.6	8.3		39.7	54.7	L	9.6		32.9	28.5		9.6		23.5	40.8	
9.6		4.4	14.5	9.1	51	49.0	42.3	Sj	9.4		50.8	38.7	8.4		52.2	43.0	M	8.9		31.7	47.0	K

4504: 23ʰ43ᵐ 49′7″8 B_3, Ep. 1883.44 4506: 51ʰ01ᵐ 47′34″2 B_3, Ep. 1883.43

4507: 15ʰ24ᵐ 51′14″6 B_3, Ep. 1883.44

4601—4660				4661—4720				4721—4780				4781—4840				4841—4900			
17h—18h		—10°		18h		—10°		18h		—10°		18h		—10°		18h		—10°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.7	56	48.1	10.4	9.2	12	21.3	47.9	9.5	26	5.0	13.6	9.7	37	24.3	15.3	8.6	44	35.4	22.9 L
8.5	57	4.6	30.8 M	9.5		22.9	14.9	9.0		25.5	0.2	9.3		29.3	59.0	9.4		48.6	31.1
9.8		25.7	34.8	9.4		50.0	1.7	8.0		34.9	38.1 Sj	9.7		31.4	17.0	10		52.0	35.5
9.5		31.9	44.7	10	13	9.8	10.4	9.5		36.9	53.5	9.2		31.7	40.5 M	9.2		53.3	31.0 L
9.8		34.2	35.8	9.9		11.4	2.6	8.7	27	23.6	16.0 M	9.8		34.5	46.8	10		53.6	5.7
9.5		37.4	6.7	10		30.6	27.5	9.0		55.4	38.8	9.2		49.3	56.1	9.9		54.5	12.0
9.2		49.3	2.9	9.1	14	22.9	9.6	8.1	28	5.2	59.9 K	7.0		51.0	38.3 K	9.8		55.7	2.9
9.5		53.8	9.2	9.8		25.5	28.8	9.1		13.0	41.3	8.5		55.8	8.8 Sj	8.0	45	14.4	24.0 Sj
9.5	58	3.7	45.2	9.2		26.8	11.7	9.4		56.9	45.0	9.5		56.5	23.7	10		30.5	6.0
9.9		9.3	11.9	8.4		30.5	23.5 K	9.4	29	28.1	16.8	9.8	38	0.7	49.1	10		31.6	17.3
8.7		33.1	17.9 K	9.4		45.0	4.7	10		30.0	7.0	9.4		0.8	23.7	9.4		34.2	45.7 M
8.7		35.7	47.9 M	9.4		53.3	20.1	8.8		40.0	50.7 M	8.2		2.7	25.9 K	9.0		51.6	26.3 K
10	59	13.8	18.4	6.4	15	1.5	17.0 Sj	9.5		46.4	10.2	8.5		24.5	28.7 K	9.2	46	1.1	13.7
9.6		30.6	23.7	10		11.4	58.5	9.6		50.0	38.1	9.5		25.0	3.1	9.3		11.4	57.9
9.6		49.4	5.5	9.5		14.8	49.5	9.8		50.0	26.0	9.7		28.2	56.8	8.8		12.2	41.5 K
8.0	0	15.7	33.9 K	9.5		22.4	47.8	9.4	30	9.5	19.4	9.6		43.0	4.5	9.6		13.7	55.1
9.3		26.2	59.7	9.9		40.3	23.7	9.5		11.4	38.1	6.1		43.3	16.5 Sj	9.5		19.7	40.4 M
9.4		42.3	12.2	9.1		49.8	13.8	9.0		30.9	7.9 M	10		45.9	25.6	9.3		27.3	55.8
8.5	1	30.6	50.4 K	9.2		59.2	10.4	9.3	31	1.8	56.8	9.5		46.3	31.1	9.0		36.0	7.3
9.3		39.1	42.7	9.0	16	5.9	46.0	9.8		10.5	6.3	9.4	39	14.2	34.5	9.3		36.6	26.9 M
9.6	3	14.8	9.6	9.5		16.8	26.0	9.7		14.5	36.2	9.6		23.4	26.6	9.2		43.1	54.4
9.0		30.7	17.6	9.0		18.2	53.0	9.8		25.1	11.7	9.4		49.5	31.4	9.0		50.2	53.5 Sj
9.5		34.9	55.0	10		23.5	3.4	9.9		33.6	35.7	9.5		59.1	41.5	7.4		53.7	41.2 K
9.0	4	8.9	3.8	8.3		28.5	29.1 K	9.5		42.4	9.0	8.5	40	1.2	18.0 K	9.8	47	1.7	24.0
8.2		22.2	45.6 K	9.8		43.9	55.4	9.8		43.2	31.1	9.4		1.7	50.6	9.5		3.4	40.7
9.3		23.2	55.8	9.7		56.2	33.2	9.5		54.4	8.1	9.5		29.6	45.7	9.6		10.5	8.6
9.4		43.7	11.7	9.2	17	5.7	12.8	8.9		59.3	19.7 M	9.7		37.5	55.9	8.8		14.7	35.9 K
9.8		49.8	6.6	9.2		5.9	4.3	9.1	32	20.5	19.5	9.9		37.6	31.8	9.5		16.3	4.8
9.0		59.6	29.3	9.7		7.9	29.2	8.7		30.5	50.5 M	9.6		54.4	19.5	9.3		22.5	18.7
9.3	5	44.1	26.7	9.1		11.9	6.1 M	9.5		34.0	23.2	9.9		55.4	37.8	8.8		31.0	8.2 K
10	6	16.0	2.0	9.8		20.3	46.5	9.4		51.0	22.1	9.5		57.0	36.9	9.7		55.1	55.6
8.8		20.7	43.0 M	9.8	18	19.8	46.0	9.4		56.1	39.8	9.4		58.5	5.1	9.5	48	13.9	12.5
10		21.3	38.2	10		33.6	19.7	9.5	33	2.7	15.9	9.3	41	10.4	59.0	9.4		16.5	56.3
9.5		47.4	21.8	9.5		38.3	48.5	9.8		12.9	54.9	9.4		11.4	23.7	9.8		16.5	6.1
9.8		53.5	27.9	9.4		46.6	9.3	9.5		18.5	30.2	8.7		12.5	6.0 M	9.5		30.2	34.6
9.4		56.4	58.2	9.0	19	14.6	14.6	8.3		26.0	31.8 M	9.0		13.6	44.6	9.0		30.9	42.4 M
9.3	7	22.4	0.6	9.4		15.8	38.8	9.0		52.4	41.7 M	9.0		15.7	22.9 M	10		57.9	52.9
9.4		32.6	52.3	9.2		34.3	44.5	10	34	14.4	30.6	9.7		17.7	53.2	9.0		59.1	55.0 M
9.0		58.8	8.0	9.4		44.4	7.3	9.0		24.1	13.8	7.8		31.1	32.6 Sj	9.1	49	4.8	8.2 M
9.5	8	7.7	22.3	9.6	20	13.8	44.0	9.0		31.0	33.9 M	9.2		32.7	22.3	10		13.4	35.1
9.8		48.6	23.7	9.6		20.9	17.4	9.8		42.5	46.6	9.5		36.1	32.8	9.7		28.6	16.5
8.0		52.2	30.0 K	9.7		24.9	14.8	9.4		49.0	26.3	9.8		58.4	20.7	9.9		29.5	7.4
9.5	9	2.4	57.1	9.3		32.1	54.7	9.8		49.7	47.7	8.9	42	17.6	42.5 M	8.6		36.9	12.1 M
9.5		43.6	56.7	9.1		42.0	3.3	8.7		59.9	7.7 M	9.4		33.1	44.2	9.3		41.1	25.3
9.7		49.4	14.6	8.1		46.5	18.8 L	10	35	8.0	57.7	9.0		36.7	17.4	9.5		42.2	18.4
8.6	10	28.4	54.6	9.9	21	15.0	19.4	10		17.4	11.6	9.4		46.5	1.2	9.4	50	2.2	26.2
9.0		33.7	24.8	8.8		41.4	23.1	9.4		26.0	59.4	10		55.7	23.8	9.5		6.7	26.0
9.5	11	3.9	5.2	9.1		49.9	45.7	8.3		40.0	52.3 K	8.6	43	6.8	23.7 M	9.8		8.3	55.8
8.8		23.7	46.0	7.7	22	29.5	57.6 K	9.8		45.6	42.5	9.8		7.6	27.8	9.5		27.1	7.6
8.8		26.2	30.5 K	9.5		57.1	55.7	10		48.3	58.2	9.5		17.6	29.0	9.3		32.8	35.1
8.4		33.1	59.1 L	9.5	23	4.0	34.4	8.5	36	0.0	17.9 K	9.7		19.7	52.4	10		36.0	7.6
8.2		44.3	56.7 L	9.8		21.0	1.2	9.4		6.7	57.3	9.1		22.1	38.4 M	9.2		37.9	9.5
8.3		48.7	31.5 K	5.5		23.9	53.4 Sj	9.5		7.5	2.8	9.4		29.7	14.2	9.5		39.7	21.0
9.2		53.8	43.7	9.6		25.1	43.1	9.7		10.5	50.9	9.5		31.1	33.7	8.8		47.8	47.1 K
9.5	12	1.4	1.2	9.4		54.3	30.2	9.6		11.0	55.0	8.6		39.9	57.2 Sj	9.8		59.8	9.7
9.1		2.9	26.1 K	9.1	24	8.2	16.8	8.3		38.0	35.0 K	9.5		44.6	40.7	9.1	51	5.4	11.5 M
9.3		6.4	2.3	8.5	25	0.4	48.4 K	8.5		39.4	45.0 K	9.4		44.9	19.0	9.2		11.6	14.1 M
9.5		9.8	19.3	9.0		23.0	32.6	9.6		44.3	18.4	9.2	44	5.7	8.7	9.8		16.2	11.6
9.8		16.1	39.8	8.8		48.0	4.8 M	9.0		45.4	40.8 K	9.5		20.4	20.3	10		22.0	4.9
9.7		19.8	58.7	9.0		55.9	44.4	9.5	37	17.6	58.7	9.5		27.9	33.3	8.8		23.2	26.0

4901—4960				4961—5020				5021—5080				5081—5140				5141—5200			
	18h	−10°			18h—19h	−10°			19h	−10°			19h	−10°			19h	−10°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.0	51 26.3	46.6	M	9.5	59 40.4	10.0		9.3	9 3.3	6.1		9.7	19 21.2	0.5		9.7	30 45.6	15.4	
9.0	43.5	18.7	M	9.5	41.9	53.9		10	31.6	17.5		8.2	38.0	22.4	Sj	8.8	56.3	39.4	
9.6	52 5.2	53.7		9.2	45.7	22.1		9.8	10 2.0	40.0		9.3	44.2	55.4		8.2	57.3	39.8	L
9.5	8.8	28.9	M	9.6	46.1	55.5		9.8	23.0	49.1		9.2	44.5	9.7		9.8	31 15.0	28.2	
10	9.6	3.5		9.4	48.0	24.0		10	27.1	1.6		9.8	52.3	52.4		9.5	18.8	44.1	
9.4	16.7	27.1		9.6	51.1	51.8		10	27.6	14.8		9.5	20 7.1	23.2	M	9.7	41.2	19.3	
9.5	19.5	2.0		9.1	55.3	34.6	M	9.8	31.1	42.7		9.8	13.9	15.6		9.8	54.9	8.4	
9.3	43.2	49.6		9.7	0 0.2	33.9		8.7	11 4.2	24.4	Sj	9.4	17.6	59.9		9.3	32 4.3	10.3	
9.7	51.9	49.6		8.7	43.7	19.8		9.6	22.4	24.1		8.2	38.7	38.3	M	9.5	27.6	56.0	
9.5	53 2.4	17.6		9.7	50.3	27.0		9.4	27.9	34.7		9.3	49.0	23.8		9.5	32.6	54.3	
9.4	6.5	22.9		8.0	1 6.8	4.3	B	9.5	38.0	33.6		9.7	21 25.9	16.6		9.3	48.2	30.2	M
9.1	7.3	17.2	M	8.5	14.3	26.5	M	9.5	50.4	5.5		10	32.5	17.6		9.9	33 9.8	58.9	
9.4	9.4	11.4		9.2	45.4	33.5		9.4	57.2	51.7		9.5	48.5	1.7		9.7	24.6	13.6	
9.1	14.2	21.2		9.9	49.5	13.5		8.5	12 17.5	13.3	Sj	9.8	50.8	48.0		9.4	33.3	15.2	
8.9	28.1	14.0	K	9.0	2 12.9	53.5	M	7.3	24.2	49.3	K	9.5	54.1	33.0		9.0	34 4.1	25.8	M
9.5	28.9	16.2		9.8	14.0	55.2		9.1	32.9	5.2		9.1	22 19.2	54.1		9.1	10.6	35.8	
9.3	29.3	9.1		9.6	27.3	21.1		9.4	56.8	23.7		8.4	23.3	48.0	Sj	9.3	21.8	0.2	M
8.8	34.7	54.4	K	9.6	39.3	27.3		9.4	13 6.4	2.7		9.5	28.4	7.3		10	28.2	28.6	
9.4	41.6	15.6		9.3	42.4	19.4		8.9	8.4	2.7	M	9.1	43.1	35.2	K	9.4	31.9	23.3	
9.5	46.3	47.4		9.3	51.4	10.6		9.4	10.6	0.5		8.8	58.7	9.9		9.8	37.2	29.7	
9.1	50.3	19.4	M	8.9	3 1.8	1.9	Sj	8.3	22.9	26.5	K	9.0	23 1.2	56.1		9.6	38.1	18.7	
9.2	51.6	20.8	Sj	9.8	6.0	47.8		10	24.2	26.0		8.8	11.2	40.9	Sj	9.8	35 23.7	33.1	
9.1	53.1	22.6	K	9.1	18.5	43.1		9.5	24.4	0.2		9.1	24.7	42.9	K	9.8	38.7	40.4	
9.3	54 9.2	34.7		8.3	27.7	15.4	K	10	33.3	19.8		9.5	40.5	0.0		9.4	44.2	34.4	
10	20.7	11.0		8.6	58.6	49.0	K	8.9	35.8	37.9	L	9.1	53.0	9.1		9.3	46.6	50.0	
6.5	31.6	55.6	Sj	9.4	4 4.8	1.0		9.8	44.1	46.8		9.3	24 6.8	52.9	M	9.1	49.4	8.0	
9.3	33.7	31.4		9.5	5.4	14.6		9.1	47.6	39.6	L	9.9	9.1	28.7		9.5	54.7	5.6	M
9.5	55 14.5	1.0		8.3	14.0	38.0	K	9.2	50.8	29.8		9.0	20.9	17.1	M	9.8	55.9	14.5	
9.1	17.5	41.5		9.1	33.3	26.4	M	9.6	14 8.2	22.8		10	25 5.2	18.9		10	36 38.2	37.0	
9.0	37.0	57.9		9.5	5 7.9	3.3		9.2	26.1	38.2	M	9.8	24.7	37.2		9.7	42.7	20.5	
8.8	59.7	28.4		9.0	21.2	29.6	K	10	30.6	45.5		9.0	32.0	20.9	Sj	9.7	45.8	55.4	
8.9	56 2.3	54.3	M	9.5	32.1	5.3		9.1	37.3	32.7	Sj	9.0	36.7	46.1	K	7.0	54.3	55.0	K
9.1	6.8	44.7		9.9	34.2	54.2		8.5	44.5	1.8	M	9.8	57.1	13.0		9.5	37 6.8	33.7	
9.0	8.7	29.1		8.5	35.7	35.3	K	9.4	52.9	23.0		9.8	57.8	18.9		9.4	20.7	2.1	
9.6	14.5	21.0		9.9	43.1	53.4		8.7	54.5	18.4	Sj	8.6	26 9.7	42.4	Sj	9.5	50.3	42.4	
9.4	15.6	17.2		9.9	44.6	58.6		9.7	15 3.6	57.0		9.1	28.2	36.8	K	8.9	38 22.6	11.0	
9.5	27.3	52.0		9.3	49.9	34.3		7.0	9.5	58.6	K	9.8	28.3	49.0		10	30.2	30.0	
9.6	37.5	59.7		10	50.1	54.5		9.1	16.4	16.3	M	9.0	41.6	39.2	K	9.5	38.2	1.0	
9.7	52.6	11.9		9.6	55.1	16.3		9.2	17.4	47.1	M	10	59.8	13.5		9.0	54.0	59.5	
9.4	55.3	38.4		9.9	57.6	29.7		9.4	23.2	52.3		9.8	27 0.7	15.7		10	54.5	52.4	
10	59.5	3.9		10	6 5.2	59.4		9.1	48.9	6.4	M	9.3	2.0	5.2		8.4	39 12.8	24.6	K
9.6	57 36.8	25.1		8.7	14.4	12.3	Sj	9.0	55.5	34.1	M	5.3	7.3	52.4	K	9.4	29.3	38.5	
9.4	39.8	25.2		9.5	18.6	4.3		10	56.0	42.2		9.3	40.2	42.5		8.7	32.7	2.0	Sj
9.3	41.1	4.5		9.5	19.3	3.2		10	16 21.7	17.5		9.5	47.4	14.2		10	51.8	55.7	
9.8	53.7	3.9		9.1	28.1	11.5		9.8	46.1	11.0		9.5	48.3	52.0		9.2	40 9.1	12.4	
8.9	58.8	51.0		9.5	47.4	8.9		9.0	56.4	6.0	M	8.3	50.7	40.8	K	9.5	28.8	48.1	
9.7	58 9.5	7.6		8.1	53.4	58.1	K	9.5	17 4.0	36.4		8.9	28 7.1	20.7	Sj	9.3	33.3	11.8	
8.7	20.6	56.1	M	9.6	57.3	7.7		10	24.8	8.2		9.8	18.8	34.3		9.8	33.7	3.9	
8.9	27.3	0.9		10	7 0.9	29.9		9.4	59.7	39.1		9.8	23.9	19.5		9.1	45.7	11.0	
9.8	31.9	19.4		9.8	1.6	19.6		9.9	18 4.0	34.8		8.3	48.3	45.3	Sj	9.8	47.3	43.8	
9.1	34.2	30.8		9.8	12.0	45.6		9.7	5.9	1.9		7.2	53.1	28.6	K	7.9	41 9.3	20.4	M
9.6	42.7	28.7		9.6	13.1	35.3		9.7	9.8	19.0		9.8	56.9	26.1		9.3	23.2	12.2	
10	46.3	35.0		9.6	15.5	58.3		9.5	13.6	16.0		9.5	29 35.8	51.4		9.4	26.6	4.9	
9.6	51.1	44.0		9.4	57.8	16.3		9.8	28.4	5.6		9.2	38.3	14.4		9.5	39.4	44.0	
9.0	52.8	22.0		9.2	8 9.1	50.7	M	9.6	42.9	53.3		8.0	39.2	3.3	K	7.0	42 12.8	22.1	Sj
9.8	55.0	6.0		8.7	21.3	11.6	Sj	9.6	43.2	56.6		9.6	40.5	17.4		9.2	23.9	54.4	
9.7	59 2.4	35.2		9.0	23.9	20.2		10	49.3	31.1		7.2	45.9	17.8	Sj	9.0	51.0	29.4	K
9.5	17.4	37.0		8.2	44.4	25.5	Sj	8.3	57.3	32.0	K	9.0	30 17.6	0.2	Sj	9.5	52.9	10.8	
10	36.0	49.6		9.5	51.3	1.0		9.8	19 2.5	22.2		9.5	42.6	14.1		9.5	43 2.3	23.4	
9.4	36.5	44.3		8.9	55.4	21.2	Sj	9.7	10.8	55.1		7.1	45.4	28.9	L	9.0	13.8	5.5	

5002: 14ᵐ65 12′21″5 B_1, Ep. 1883.64
5130: 49ᵐ34 45′5″4 B_4, Ep. 1872.63
5058: 16ᵐ50 16′33″5 B_1, Ep. 1884.63

5201—5260

	19h		−10°	
m	m	s	′	
9.2	43	15.2	33.5	M
9.4		58.1	10.7	
7.3	44	3.6	43.1	L
10		9.2	24.6	
9.8		21.1	0.5	
9.8		32.1	39.6	
9.5	45	0.6	32.7	
9.5		18.5	45.5	
9.8		32.3	2.9	
8.6		32.8	28.9	Sj
9.5		47.6	39.1	
9.8		54.6	16.9	
9.9	46	0.2	15.0	
9.6		3.3	24.4	
9.2		20.8	59.9	
9.4		21.5	0.8	
8.2		33.3	29.1	K
10		42.5	50.3	
10		42.6	41.6	
9.9		47.9	12.1	
9.7		55.5	49.9	
10		56.7	32.5	
8.8	47	33.5	56.9	M
9.8		48.1	41.6	
9.9		48.1	47.0	
9.0		59.4	0.8	
9.8	48	16.0	38.9	
9.5		48.7	40.8	
9.9	49	1.0	7.7	
7.5		37.9	25.0	L
9.2	50	0.4	25.2	M
9.6		2.8	0.5	
9.6		38.2	43.9	
9.0		54.7	44.1	Sj
9.0	51	11.7	56.5	M
9.0		26.2	55.8	
10		28.1	46.2	
6.3		53.9	19.8	Sj
9.2	52	25.9	22.2	
9.5		30.8	11.7	
9.5		36.6	50.1	
9.2		45.8	58.2	
9.5		46.7	46.5	
9.8	53	1.7	41.4	
9.5		22.7	43.8	
9.5		27.6	55.8	
9.4		36.0	40.7	
9.2		41.1	17.7	
9.0		52.9	2.7	M
9.4	55	10.0	29.8	
10		23.4	25.1	
10		59.5	45.7	
9.6	56	2.3	41.9	
9.3		11.4	29.0	
9.6		20.5	42.1	
10		22.6	29.8	
10		23.1	31.8	
9.8		24.7	16.9	
9.2		25.9	57.4	M
9.5		32.1	26.6	

5261—5320

	19h—20h		−10°	
m	m	s	′	
9.5	56	40.8	46.2	
9.1		41.5	58.8	
9.3		44.7	54.2	
9.2		50.9	55.4	M
9.2		52.2	46.9	
9.1	57	2.2	50.5	
8.5		3.2	59.4	K
8.8		12.1	53.7	M
9.7		16.1	10.1	
10		35.7	16.9	
9.5	58	6.3	43.5	
9.5		13.4	31.7	
9.9		16.8	40.2	
9.3		18.9	33.7	
9.5		21.4	46.2	
9.2		32.0	4.1	
9.8		35.0	2.7	
9.3	59	4.3	55.2	
9.8		26.6	53.6	
10		30.4	54.3	
9.6		57.9	37.4	
9.5	0	23.4	11.4	
9.9		29.2	53.5	
7.3		34.0	43.5	Sj
6.0		35.9	28.7	Sj
9.8		53.1	53.3	
8.7		56.3	45.3	K
8.5	1	13.7	55.7	K
9.8		37.6	9.0	
8.7		39.4	34.5	M
10		40.8	12.8	
9.3		50.9	10.4	
9.6	2	4.4	13.8	
8.8		9.8	57.4	Sj
8.9		16.4	12.1	
9.6		26.3	48.1	
9.3		30.7	59.2	
9.9	3	16.0	45.0	
10		32.8	9.4	
9.8		35.8	47.0	
10		36.7	18.7	
10		37.0	23.4	
9.0		39.5	33.7	M
9.2		45.8	45.3	
10	4	9.0	6.4	
10		31.8	17.5	
9.0		33.4	41.2	M
9.0		39.9	7.9	K
9.4		41.5	3.9	
9.0		42.1	42.7	
9.1		53.6	46.7	
9.8		54.7	18.1	
9.4	5	15.5	25.0	
9.5		27.3	49.6	
10		32.7	58.5	
9.5		41.8	47.1	
9.1		45.0	29.2	
9.3		53.8	46.4	
9.1		55.3	58.3	K
9.4		59.3	59.2	

5321—5380

	20h		−10°	
m	m	s	′	
10	6	4.0	0.9	
7.8		6.1	3.1	K
9.5		19.4	20.2	
9.7		25.4	12.6	
9.5		51.6	7.2	
9.4	7	11.7	54.5	M
9.1		14.5	10.0	
9.8		22.4	30.9	
9.8		32.9	57.0	
9.4		37.4	53.0	
9.8		43.1	6.1	
8.9		59.9	35.6	M
8.5	8	16.6	1.6	Sj
9.8		16.8	42.7	
10		26.3	48.0	
9.5		33.6	58.6	
9.9		45.1	3.4	
8.1	9	11.0	8.4	K
9.8		36.8	41.7	
10		44.5	1.2	
9.7	10	4.2	21.0	
9.7		35.1	17.4	
9.5		49.1	0.1	
8.0		53.8	19.9	Sj
10	11	1.8	49.6	
10		12.8	25.0	
9.5		22.9	37.3	
9.8		28.5	15.7	
9.7		43.2	53.4	
9.5	12	16.4	32.7	
8.5		22.7	49.4	M
9.1		28.0	25.5	
9.4		37.5	10.8	
9.8		54.1	58.6	
9.5		57.6	38.9	
8.4	13	3.0	8.2	K
9.8		8.4	18.7	
9.6		27.6	26.8	
7.7		35.4	35.7	K
9.4		55.9	31.3	
9.1	14	6.3	57.9	M
9.8		13.6	1.9	
9.8		22.6	0.5	
9.0		45.5	38.5	K
9.2		46.7	9.7	
9.1		47.2	45.6	Sj
9.4		50.6	14.9	
9.5		58.9	28.2	
6.3	15	8.1	6.9	L
9.0		15.4	34.0	K
10		28.2	3.5	
9.4		43.7	20.3	
9.7	16	3.3	59.3	
9.0		5.4	19.4	M
9.8		20.0	19.7	
9.0		22.0	26.0	M
9.2		24.5	24.5	M
10		32.8	41.4	
9.5		33.4	53.9	
9.8		34.8	46.7	

5381—5440

	20h		−10°	
m	m	s	′	
9.7	16	46.3	33.5	
10		50.9	52.2	
9.0	17	5.7	46.2	M
9.8		16.4	37.7	
9.5		27.1	29.2	
8.5		32.9	53.6	M
9.7		48.9	14.1	
8.9		51.7	57.4	M
9.5	18	4.3	46.4	
9.3		9.9	11.9	
9.5		24.4	22.3	
9.8		41.5	26.6	
9.7		50.5	9.8	
10		56.2	45.5	
9.2		59.8	19.6	L
9.6	19	31.0	35.7	
9.0		58.4	36.6	K
9.8	20	14.2	7.9	
9.0		24.5	24.1	M
9.1		48.8	12.0	K
9.3	21	15.2	0.8	M
9.2		22.2	11.3	M
10		24.0	23.7	
9.3		25.8	39.1	
8.5		42.4	28.9	L
9.4		52.0	55.6	
9.1		52.1	46.1	
9.8	22	7.5	16.0	
9.2		9.9	33.0	M
9.3		13.1	33.7	
9.8		17.5	12.7	
9.5		23.5	15.5	
9.8		26.2	6.6	
7.8	23	2.4	30.6	K
9.1		9.2	8.1	Sj
9.4		21.5	15.4	
9.8		24.4	28.6	
9.7		45.5	18.3	
9.7		51.1	53.9	
9.4	24	10.9	31.1	M
9.9		17.8	5.6	
9.9		22.7	6.2	
6.2		29.1	20.4	B
9.5		32.4	29.8	
9.3		37.2	51.1	
10		42.3	6.3	
9.1	25	21.4	37.0	M
10		22.2	51.0	
9.5		27.8	19.3	M
10		34.3	7.2	
8.5	26	1.4	36.8	B
10		25.2	45.0	
9.2		26.5	23.8	M
9.9		31.9	32.4	
9.8		37.6	49.6	
9.5		55.4	59.8	
9.5	27	9.3	42.9	
8.0		11.3	4.3	Sj
9.5		14.2	45.3	
9.8		15.8	14.5	

5441—5500

	20h		−10°	
m	m	s	′	
9.5	27	29.3	44.7	M
9.8		41.1	59.6	
9.6		44.3	43.1	
9.7		58.6	14.4	
10	28	6.0	27.5	
9.0		14.1	21.6	M
9.0		29.3	43.7	K
8.8		34.0	20.5	B
9.4		36.9	5.5	
9.8	29	18.5	55.6	
10		21.6	11.7	
9.8		27.7	40.5	
9.5		30.1	22.3	B
9.1		38.8	40.0	K
9.7		42.7	52.3	
9.5	30	2.8	39.2	M
10		20.7	52.4	
9.3		52.3	11.5	M
10		57.4	50.7	
9.0		59.9	5.5	R
9.5	31	5.9	11.5	
9.9		35.7	42.4	
9.5		41.4	28.1	
9.5		51.6	51.2	
9.7		52.9	0.7	M
9.0		58.8	34.1	M
9.0	32	0.9	34.3	M
10		20.9	27.8	
9.5		35.5	21.1	
8.9		37.8	42.1	Sj
8.8		49.7	43.6	K
8.5	33	11.9	1.9	B
8.5		15.4	9.2	K
9.2		59.8	40.2	
9.8	34	0.9	55.5	
9.5		8.4	26.3	
10		12.0	2.0	
10		15.2	52.2	
9.2		49.2	51.4	
9.5	35	1.8	42.2	
9.5		10.4	36.9	
9.8		12.3	42.0	
9.5		19.5	23.4	
9.4		34.9	18.4	
9.4		35.3	21.2	M
9.6	36	17.0	3.7	
9.0		30.4	8.0	
9.5		51.9	33.9	
9.6	37	15.3	32.6	
9.8		30.9	32.9	
10		31.1	16.3	
9.6		43.4	31.1	
8.3		48.2	38.7	M
9.1	38	1.7	30.2	WC
9.5		5.4	37.7	
9.8		16.0	52.0	
9.2		19.6	12.6	
9.1		29.5	20.1	M
9.0		47.9	25.3	
9.5		49.3	18.2	

5238: 53:85 20′5″.8 B_1, Ep. 1872.63
5395: 59:73 19′30″.3 B_1, Ep. 1884.63

5369: 7:28 6′52″.7 B_1, Ep. 1883.64

5501−5560				5561−5620				5621−5680				5681−5740				5741−5800			
20h		−10°		20h−21h		−10°		21h		−10°		21h		−10°		21h		−10°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.0	38	50.0	4.4 K	8.5	51	26.4	48.8 Sj	10	5	14.5	33.1	9.0	21	29.3	54.1 K	9.8	34	9.6	46.2
9.1		50.8	55.7 M	8.0		36.5	3.3 K	10		28.1	25.3	9.4		34.9	57.4 R	9.6		22.7	51.9
9.2	39	27.2	15.5	10		53.1	28.5	9.9		42.6	0.1	10		45.8	41.8	10		24.7	37.2
8.2		43.9	34.7 B	9.6	52	8.9	48.3	8.9		50.9	13.4 Sj	9.6		47.3	17.2	9.8		40.0	11.5
9.8		47.0	16.0	9.5		29.4	32.6	9.5	6	5.3	5.7	10	22	19.8	2.7	9.0		46.7	34.4
4.2		49.5	1.3 Sj	9.5	53	16.4	46.8	9.3		15.1	55.4	9.3		22.9	57.1 M	9.3		51.8	7.5
9.2	40	9.7	52.1	9.7		23.4	56.1	9.8		44.4	7.6	9.5		24.0	21.7	8.7		57.2	17.7 K
8.0		16.9	16.8 K	9.9		49.9	58.9	9.4	7	0.8	17.3	10		25.7	14.9	10	35	9.6	11.3
9.0		18.8	34.1 M	9.8		52.2	18.3	9.8		3.1	32.2	9.9		26.9	31.1	9.4		36.2	57.0 R
9.6		34.6	19.7	9.0		53.6	22.0 M	8.7		33.3	56.9 Sj	9.5	23	16.4	44.1	9.0		45.2	32.5
8.7		37.4	11.6 Sj	9.9		55.0	31.9	9.1		38.9	55.8 M	9.5		20.6	35.6	8.5		49.7	39.1 K
9.8		45.3	40.3	10	54	19.1	29.5	10		42.3	7.8	9.5		31.3	7.1	10	36	18.4	27.7
9.5	41	1.4	19.4	10		28.0	38.4	10	8	41.5	39.2	9.0		39.6	55.7 K	9.8		49.8	59.7
9.4		17.3	44.8	9.4		30.3	14.8	10		54.9	40.8	9.9		45.0	52.2	9.6		50.7	53.3
9.0		18.7	53.3 Sj	8.9		30.9	14.3 K	9.1		56.6	44.4 K	8.9		46.9	45.1 Sj	8.8	37	6.7	52.5 Sj
9.5		30.9	20.4	9.1		35.9	48.6 M	7.2	9	8.6	44.3 Sj	7.0		49.5	22.8 K	9.2		21.6	58.8
10		46.5	20.6	8.1		39.1	0.9 K	8.7		31.6	40.8 K	10	24	22.0	28.5	9.8		40.7	4.1
8.9	42	14.6	20.6 M	6.8		43.5	33.9 L	9.7		32.5	21.5	9.5		28.0	55.5	9.5	38	43.1	55.9
9.4		47.8	5.6	9.7		52.6	1.5	9.8	10	12.6	41.0	10		29.3	7.4	9.8	39	8.4	46.0
9.4		47.9	33.8 M	8.6		55.9	47.3 K	9.9		37.0	19.4	9.8		34.0	50.2	9.0		19.8	48.3 R
9.0		51.6	0.9 Sj	9.3	55	4.5	6.0	9.5	11	21.1	39.9 M	9.5		51.4	27.7	8.3		41.8	25.5 K
10	43	7.4	53.5	10		12.4	44.4	9.5		26.8	9.3	9.7		59.7	56.8	9.5		56.5	5.0
9.8		16.4	8.3	9.8		32.9	57.4	9.5		27.9	17.7	9.3	25	14.7	25.7 M	9.2	40	1.3	32.7 M
9.1		27.2	51.6 K	8.5	56	2.0	28.6 Sj	8.2		28.2	10.9 Sj	9.3		28.4	15.4 M	8.5		11.3	32.1 Sj
9.8		46.6	2.5	10		9.4	49.4	9.3		28.4	41.9	7.7		49.1	18.2 K	9.6		41.0	12.7
7.5		54.1	51.6 Sj	10		11.9	50.2	10		44.3	6.0	9.4	26	29.3	8.5	9.2		42.9	58.2 K
9.9		57.4	25.7	9.6		34.6	11.9	10		59.4	1.7	9.4		29.5	24.1	10	41	0.5	52.8
9.8		58.9	16.8	9.2		54.6	12.5 M	9.5	12	0.6	58.0	9.4		53.8	13.0	9.5		9.5	4.9
9.5	44	15.7	57.1	9.6	57	6.6	56.1	9.8		5.6	7.8	9.0	27	38.7	56.4 K	9.8	42	29.4	30.3
9.4		37.9	34.4	9.6		13.3	15.4	9.5		7.2	46.9	9.5		45.0	27.7	9.6		56.2	10.4
9.6		41.2	11.0	9.8		20.8	53.0	8.9		18.7	50.0 Sj	8.5		54.0	37.8 Sj	9.7	43	12.9	1.8
9.3		53.5	22.5	8.8		23.0	38.7 R	9.6		32.2	40.8	9.6	28	10.8	51.4	9.3		15.6	7.3 Sj
8.8		53.6	36.4 M	9.4		32.0	36.4	9.6		42.2	36.6	9.5		37.5	21.3	9.6		17.2	0.2
9.9		57.0	39.4	10		53.2	4.6	9.8		45.9	1.4	7.3	29	8.1	49.0 Sj	7.5		19.9	43.1 Sj
9.5	45	3.8	35.1	9.5	58	0.8	11.0	9.2	13	33.2	26.1	10		40.3	48.1	9.3		32.0	41.8
9.8		8.4	47.6	9.0		28.9	57.5 K	9.6	14	2.4	15.9	10		40.7	40.5	9.7		51.2	20.1
9.2		10.5	24.0	9.5		29.6	53.8	9.3		2.7	16.7	8.8		53.1	39.2 M	9.8	44	41.9	12.9
9.7		17.8	1.6	9.9		45.9	20.7	8.7		9.4	56.0 M	9.5		55.6	31.4	9.4		44.3	53.6
9.3		32.0	1.4 Sj	10		49.3	7.3	9.4		23.4	7.6 Sj	10	30	1.3	29.4	7.8		46.7	5.7 K
9.8	46	5.1	4.6	8.3	59	18.0	27.8 K	9.4		42.2	30.1	8.0		4.9	14.6 M	9.0		57.0	30.1 M
9.9	47	10.5	37.5	8.8		22.1	22.2 Sj	10		57.7	40.4	9.8	31	14.3	8.8	9.2	45	16.4	36.2 M
9.7		15.9	49.8	9.5		30.2	4.2	10	15	48.8	45.2	9.3		32.4	8.6 M	10		31.5	35.1
9.4		26.4	52.2	9.4		38.0	31.1	9.0	16	26.1	17.7 K	9.6		32.9	35.8	8.3		35.7	56.0 K
9.5		45.6	24.4	10		39.4	25.0	9.1		30.5	59.2 B	9.0		38.3	34.5 K	9.5		45.9	37.1
10		59.2	8.9	9.8		46.9	52.5	9.5		35.1	56.5	8.8		42.5	58.4 K	6.8		50.0	59.6 Sj
9.2	48	15.9	44.8	8.0	0	2.4	47.4	9.6	17	8.8	40.6	10		47.3	44.9	8.5		57.4	27.5 K
9.4		32.2	1.2	9.0		11.3	21.3 K	9.4		12.2	36.1	9.8	32	0.0	0.6	10	46	27.1	18.1
9.3		41.3	21.0	9.3		13.4	58.0	5.5		24.8	21.7 K	8.0		25.1	26.5 K	9.6		35.6	52.7
9.3		50.7	11.8	8.8		22.3	28.0 K	8.8		30.3	31.1 K	8.5		39.8	38.7 K	9.9	47	1.0	40.0
8.7	49	0.9	52.3 Sj	9.2		26.9	47.9	9.8		44.4	16.1	9.3		44.1	25.6	9.3		10.8	17.9
8.7		2.1	28.6	9.3		29.1	29.5	9.0	19	10.9	37.4 M	8.6		46.6	51.7 K	9.5		22.0	29.3
9.6		2.6	27.5	9.5		31.2	1.5	9.5		17.5	1.7	10		55.6	6.4	9.5		30.5	53.1
6.2		3.5	14.9 K	9.8	1	17.5	47.7	9.2		18.8	41.2 M	10	33	8.3	5.3	10	48	9.6	47.1
9.4		15.9	13.8 K	9.8		46.1	35.4	10	20	7.8	38.5	9.2		9.1	51.5 M	8.8		34.6	11.6 B
10	50	7.6	28.0	8.3		47.3	15.8 R	9.4		8.0	15.7 M	9.1		17.1	51.3 K	8.3		41.0	16.2 Sj
10		31.4	52.2	9.4	2	14.6	27.5	9.7		10.6	6.5	9.9		18.1	39.2	9.8	49	6.5	47.0
9.6		34.7	5.8	8.6		31.3	32.4 M	9.2		22.4	34.8 M	9.3		39.9	17.6 R	9.8		39.6	45.3
9.7		44.0	57.0	9.1		53.0	12.4 R	9.3	21	10.9	45.8 Sj	9.9		46.0	2.5	9.8		48.6	8.3
9.2	51	1.0	44.2	8.0		54.4	48.0 M	9.4		17.0	1.7	9.3		51.4	3.1 Sj	9.4	50	5.2	58.8
9.4		10.9	50.2	9.5	3	38.6	29.3	9.5		24.5	14.7	9.3	34	3.7	43.5	9.5		50.5	53.5

5578: 44ˢ.76 33′50″.7 B_1, Ep. 1883.64 5668: 25ˢ.44 21′50″.3 B_1, Ep. 1871.62

5801—5860				5861—5920				5921—5980				5981—6040				6041—6100			
21h—22h		—10°		22h		—10°		22h		—10°		22h		—10°		22h—23h		—10°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
10	50	55.0	0.8	9.8	4	19.6	6.2	9.8	20	54.6	4.6	9.5	37	15.4	0.6	9.8	54	23.3	35.8
10	51	2.4	21.4	10		33.9	50.1	10	21	6.6	56.4	7.3		43.3	24.3 K	9.4		45.8	56.8
8.5		15.1	52.4 L	9.9		37.9	45.6	8.5		22.7	40.4 B	9.4		47.6	48.2	10		49.1	10.6
8.3		23.6	27.4 M	9.8		43.9	41.6	9.0		23.7	40.8 B	9.4	38	10.7	56.4	9.3	55	1.3	31.6
9.8		32.0	11.8	10	5	16.6	7.0	7.5		24.4	28.7 K	9.4		25.0	43.8	8.9		30.2	21.5
10		56.0	34.0	9.8		17.9	52.0	10		28.1	14.8	8.0		41.8	27.5 L	9.8		36.6	7.7
10	52	12.7	48.6	9.2		26.8	44.0	10		28.1	9.9	9.2	39	9.9	27.2	10		53.7	49.3
10		33.6	14.1	9.8	6	21.9	41.8	9.9		35.0	41.9	9.3		22.0	3.5	9.8	56	22.5	48.8
9.9	53	7.1	53.8	9.1		42.8	50.0	8.5		39.3	24.0 K	10		23.9	0.5	10		33.5	38.5
9.5		47.6	54.6	9.4	7	8.4	51.3	8.7	22	2.8	47.3 K	10		25.1	47.7	9.8		40.6	59.8
10		56.6	32.8	9.0		20.9	44.9 M	9.4		24.6	49.0	9.3		45.9	33.1	9.2		49.5	59.9 M
8.0	54	7.3	34.1 L	9.3		45.0	19.9	9.5		48.9	31.5	9.3	40	0.5	50.0 R	8.8	57	26.8	22.0 K
9.3		12.1	38.4	9.0		48.5	49.8 Sj	9.8		57.8	53.8	9.2		24.0	58.2	10		49.0	0.9
9.5		23.6	53.6	8.8		54.1	20.2 K	9.3	23	10.5	44.9	9.8		25.7	11.2	9.7		50.0	18.3
10		35.7	10.8	9.3	8	20.7	37.1	9.4		24.4	13.4	10		30.2	53.7	9.8	58	16.7	49.8
9.5		42.6	26.6	9.8		36.1	11.3	8.5		38.5	24.8 M	9.5		51.8	17.4	9.0		36.3	10.3 K
9.8	55	18.1	59.7	9.7	9	6.4	18.6	9.9		38.6	38.0	9.3	41	32.0	37.0	9.1		39.9	3.3
10		47.4	1.4	10		48.2	48.7	9.5		53.7	1.4	9.8	42	1.1	53.7	7.7		42.7	23.2 K
9.8		55.2	54.7	8.3	10	7.0	27.9 B	10	24	11.6	59.6	9.8		31.9	30.2	9.3		55.9	50.4
9.3		58.1	32.3	9.5		35.6	32.2	10		20.7	45.8	10	43	3.4	10.8	9.9	59	14.8	21.8
9.7	56	0.7	13.4	9.9		38.4	7.4	9.6		21.1	43.3	10		8.3	9.7	10		52.5	31.4
9.2		22.9	7.6 M	10		44.2	47.0	9.5		41.9	22.5	8.2		36.1	5.6 K	9.4		54.8	57.6
10		40.9	4.5	9.9	11	2.7	44.9	9.0	25	19.2	1.4 K	9.1		40.8	19.3	9.1	0	7.0	20.4 M
9.5		52.7	43.3	9.7		15.4	0.5	9.1		54.0	25.5	9.6		53.1	40.0	8.6		9.4	27.1 L
10		56.8	50.9	8.3		55.8	31.6 K	9.8	26	10.3	21.9	9.5	44	32.7	48.3	9.6		33.2	57.0
10	57	7.8	9.8	9.2	12	44.8	57.6 K	9.3		11.7	50.5 R	8.7		52.4	18.6 K	9.9		46.8	40.0
10		21.6	15.6	10		45.1	34.7	6.8		27.6	21.3 K	9.5	45	3.7	14.5	9.7		57.8	54.7
10		27.0	4.1	9.2		50.5	40.8	8.5		42.5	2.6 Sj	6.8		8.2	49.3 K	9.8	1	29.9	57.7
9.2		48.5	15.1	9.8	13	3.4	1.8	8.9	27	7.7	51.0 K	10		16.8	16.9	9.2		41.7	20.5
8.8		51.7	36.0 K	9.3		35.2	34.9	9.5		11.3	16.4	9.8		26.7	47.4	10		49.9	53.4
9.5	58	3.3	58.9 Sj	9.7		46.8	38.5	9.5	28	31.6	23.5	10		29.8	12.4	9.8		51.6	48.3
9.4		15.7	27.3	9.7		49.1	58.2	9.2		32.2	43.1	9.8		42.5	24.4	10	2	29.0	42.3
9.5		30.0	3.3	9.1	14	2.8	38.0	9.1	29	8.9	9.0 K	9.7		47.6	28.0	10	3	11.9	23.2
9.5		43.2	41.8	9.8		10.9	11.1	9.0		18.7	8.4 Sj	9.7	46	25.3	50.8	9.7		39.6	52.1
10	59	5.8	32.7	9.5		11.3	4.1	10		50.8	51.6	9.2		30.0	10.0	9.4	4	11.0	15.5
9.4		8.5	59.3	8.9		12.2	20.3 Sj	9.7		57.0	32.0	8.7	47	20.2	8.8 K	10		14.7	50.9
7.7	0	4.0	47.2 K	9.4	15	4.6	13.0	10	30	9.0	25.9	9.5		40.1	23.9	9.5		18.5	23.1
9.4		4.3	44.8	9.5		11.8	37.9	9.1		20.6	9.3 Sj	8.7		50.3	52.9 K	10		33.0	17.2
9.2		12.2	22.6	9.4	16	4.8	56.9	9.9		21.6	35.7	8.8		56.1	26.2 R	10		35.3	10.5
9.3		24.0	4.5 Sj	10		5.3	29.0	9.4		43.6	13.4	10	48	0.3	48.3	9.3		56.1	37.8
9.5		57.3	20.9 Sj	9.6		6.5	32.7	8.0	31	18.5	51.4 K	9.5		13.0	18.3	9.2	5	3.0	58.5
9.5	1	5.2	45.1	8.2		7.2	24.6 K	10		21.9	24.2	9.1		42.2	40.6 M	7.0		25.0	21.3 K
9.9		17.5	37.5	9.8		11.5	29.1	6.9		37.8	46.9 K	9.4		49.7	44.3 M	9.4		33.6	34.0
9.0		21.3	44.0 K	7.0		27.4	55.5 K	9.4		48.3	50.4	9.4	49	17.1	14.0	8.6		56.2	42.8 K
9.6		32.9	56.6	8.2		48.3	32.0 K	9.1		50.7	20.6 K	10		28.4	44.7	9.8	6	25.0	13.8
9.5	2	3.2	40.4	8.8		50.4	40.9 K	7.0	32	28.9	6.9 B	9.8		38.0	13.7	7.8	7	8.6	28.6 K
10		18.7	17.1	9.1	17	3.0	19.9 K	9.8	33	0.4	52.8	9.8	50	23.3	35.4	10		22.0	54.3
9.3		26.8	58.5	8.5		3.3	9.8 K	9.4		3.2	27.3	9.6		48.6	22.2	8.8	8	48.3	20.2 M
9.0		29.1	27.9 L	9.8		8.7	2.8	9.5		26.7	21.3	10	51	3.4	40.7	10	9	34.7	59.7
9.7		29.6	17.1	9.8		21.4	53.2	9.5		32.6	25.2	9.4		19.6	48.1	9.3		38.5	18.0
8.3		40.5	5.5 Sj	9.7		25.0	9.7	9.1	34	11.7	59.1 R	9.4		24.9	4.7	9.8	10	54.8	9.7
9.4		50.6	13.1	10		35.3	41.0	10		15.3	28.9	10		40.2	0.7	9.8		55.4	3.4
9.8	3	3.8	21.4	9.8		58.7	19.5	8.0		21.9	53.0 K	9.3		55.2	26.2	9.4	11	14.7	32.8
9.1		14.6	7.3	9.2	18	19.3	56.7	8.2		52.9	40.5 K	9.6	52	58.7	29.5	5.7		24.0	24.3 K
9.0		28.4	26.4 K	9.5		39.1	25.1	7.0	35	23.0	51.8 K	9.8	53	0.9	46.4	8.5	12	6.3	28.0 K
9.3		30.6	3.3	9.0		44.9	44.1	9.8		31.6	9.7	9.6		2.6	7.9	9.2	13	3.8	28.2
9.4		35.9	25.5	10	19	3.5	39.0	9.3	36	7.8	29.2	9.3		21.4	55.2	9.5		19.2	31.6
9.5		56.8	22.5	8.3		20.0	41.3 Sj	9.8		22.3	36.2	7.6		33.5	19.8 Sj	7.5	14	18.9	33.4 Sj
9.6	4	3.9	42.1	9.3	20	21.7	17.5 R	10		27.9	7.6	9.8		59.8	1.2	10		35.8	10.2
8.7		8.4	27.4 B	9.7		41.4	38.0	9.8		57.2	34.0	9.3	54	20.1	1.6	9.5		54.3	23.2

6101—6120

	23h		−10°	
m	m	s	′	
9.4	15	3.3	13.5	
9.6		6.1	20.5	
9.1		18.8	26.3	
9.3		38.7	23.2	
8.0		47.0	10.8	Sj
9.8	16	6.9	40.8	
9.5		48.9	32.1	
9.2		57.9	25.8	
9.8	17	13.1	55.1	
9.8		24.5	45.0	
9.4		51.0	51.3	
9.5	18	27.6	27.6	
10		29.5	2.3	
8.3	19	4.6	49.5	Sj
9.0		54.4	12.2	
9.0		54.6	34.7	
9.5	20	58.7	3.5	
9.9	21	8.6	3.5	
8.5		21.2	53.6	K
7.0		31.6	3.7	K

6121—6140

	23h		−10°	
m	m	s	′	
9.2	21	36.4	55.5	
9.8		52.0	26.9	
9.3	22	15.2	3.0	
9.3		32.1	11.6	
8.5	23	21.5	57.3	K
9.5	24	20.6	30.0	
9.1		45.2	41.1	
9.5		48.2	12.7	
9.2	25	17.6	15.8	
8.5		34.2	10.1	K
8.8		40.9	15.8	K
9.5	26	9.3	49.3	
9.3		38.2	4.4	
8.0		49.2	30.4	K
9.0		52.3	51.4	
9.8	27	36.3	55.0	
9.7		39.0	26.2	
9.4		39.1	27.5	
8.0		46.7	29.2	Sj
9.7	28	19.0	58.6	

6141—6160

	23h		−10°	
m	m	s	′	
9.7	28	48.6	48.0	
9.4	29	6.4	7.9	
10		33.3	18.5	
9.4	30	1.4	2.8	
7.8		12.9	46.4	Sj
9.0		23.6	28.8	
10	31	4.1	7.7	
8.7		44.9	47.1	K
9.5	32	6.2	49.6	
10		9.8	40.0	
9.5		11.8	31.9	
9.4		18.5	25.7	
9.3	33	10.0	40.9	
9.8		12.9	26.9	
9.2		44.5	14.6	
9.6		45.0	4.7	
9.7	34	55.7	15.6	
9.3	35	42.4	6.6	
8.9		57.3	20.1	
8.0	36	8.1	28.6	

6161—6180

	23h		−10°	
m	m	s	′	
9.7	36	30.9	51.3	
9.3		45.8	24.9	
10		58.2	55.6	
9.0	37	16.0	9.5	K
9.8		23.8	40.0	
9.8		53.2	12.2	
8.9	38	37.8	16.0	
8.3	39	51.9	37.2	K
8.3	40	10.0	44.1	Sj
8.7		56.1	3.3	K
9.1	41	43.8	25.9	
9.3		46.6	19.5	
9.5		54.9	23.5	
9.2	42	1.9	21.8	Sj
9.8		21.5	14.5	
8.9		42.4	22.0	R
6.5		45.6	46.7	Sj
9.7	43	5.6	14.8	
9.7		47.2	6.8	
9.4		52.4	27.0	

6181—6200

	23h		−10°	
m	m	s	′	
10	44	0.5	38.4	
9.5		3.3	13.6	
9.1		14.4	23.3	
9.4		49.6	34.7	R
8.3		56.0	21.7	Sj
9.5	45	1.6	22.4	
9.2		1.7	12.7	
8.5		19.0	21.8	K
9.5		38.2	45.9	
9.0		45.7	15.6	Sj
9.0	46	3.2	48.2	
7.8		34.9	5.8	K
8.8		38.0	11.9	K
9.8		48.2	49.8	
9.8	47	2.3	2.5	
9.2		5.1	37.1	
9.4		33.7	54.0	
7.0		36.8	16.1	Sj
9.4	48	12.1	19.5	
9.3		13.9	34.8	

6201—6208

	23		−10°	
m	m	s	′	
10	48	51.3	6.0	
10		54.1	52.2	
8.3		56.8	18.3	Sj
9.0	49	20.3	50.0	K
9.4		21.1	13.4	
7.8	50	2.4	26.7	Sj
9.3		21.7	41.2	
9.5		57.8	12.7	

6209—6216

	23h		−10°	
m	m	s	′	
9.5	51	58.4	4.0	
9.4	52	51.5	29.9	
9.0	53	21.7	19.7	
8.5	54	6.6	14.5	K
9.6		44.5	50.2	
9.3		55.4	12.6	
9.8	55	58.3	53.7	
9.5	56	30.5	52.2	

6217—6223

	23h		−10°	
m	m	s	′	
9.5	56	40.3	22.0	
9.8		41.0	2.2	
9.2		45.6	57.1	
9.5		49.4	33.4	
8.5		54.5	3.4	Sj
9.2	57	11.6	51.8	
9.3		21.4	40.4	

6224—6230

	23h		−10°	
m	m	s	′	
9.5	57	28.2	58.8	
10		41.0	47.1	
9.1		56.9	38.6	
7.5	58	4.8	25.4	K
9.0		7.7	56.2	K
8.8		11.0	14.2	
10	59	6.6	52.4	

Zone −11°

1—20

	0h		−11°	
m	m	s	′	
9.0	0	6.6	30.9	K
8.5		23.7	56.2	K
9.5		46.1	0.2	
9.4	1	1.0	15.0	
9.4		17.5	13.2	
9.0		28.8	55.6	K
9.1		36.5	12.0	
9.9		51.8	52.9	
9.8	2	24.7	39.8	
10		31.8	7.2	
9.7		42.6	31.4	
9.0		56.7	46.2	K
9.8	3	0.4	57.5	
10		3.9	37.2	
9.0		4.6	47.5	K
9.1		17.8	39.6	
9.7		27.6	46.3	
9.2		29.7	21.6	
8.9		40.7	41.1	K
9.6		41.5	37.6	

21—40

	0h		−11°	
m	m	s	′	
8.6	4	28.6	58.3	K
9.9	5	4.9	41.2	
9.2		20.7	50.0	
9.8		27.9	5.3	
9.4		28.6	48.9	
10		56.3	43.1	
9.9	6	29.4	58.8	
9.0		35.1	45.9	
9.7		46.3	29.8	
9.9	7	8.2	22.0	
10		32.5	44.5	
9.2		36.7	13.1	
8.8	8	16.2	50.5	
9.5		30.8	43.2	
9.5		56.5	52.5	
9.1	9	35.4	8.8	
9.0		37.8	16.0	
9.4		57.5	47.9	
9.8	10	1.1	51.2	
10		39.2	41.7	

41—60

	0h		−11°	
m	m	s	′	
9.4	10	43.0	31.3	
9.7		50.1	54.3	
9.3	11	2.5	1.8	
8.0		24.9	45.2	K
9.7	12	29.9	44.9	
8.3		54.2	58.5	K
10	13	13.7	39.5	
9.9		30.4	9.5	
9.3		34.9	3.0	
9.8		39.0	31.1	
9.5		42.5	28.4	
8.5		58.6	29.1	K
9.4	14	22.5	1.8	
10		54.4	23.1	
9.5	15	24.8	54.5	
9.8		25.5	22.6	
9.3		41.7	7.2	
9.2	16	8.0	57.9	
9.5		13.9	4.6	
9.1		39.1	31.4	

61—80

	0h		−11°	
m	m	s	′	
9.5	16	45.6	24.3	
9.8		47.4	55.0	
9.0	17	2.8	27.2	R
9.5		59.8	58.0	
9.2	18	15.8	50.7	
9.0		29.1	15.0	
9.5		50.7	3.3	
9.8	19	12.9	57.6	
9.5		20.7	31.5	
10		22.7	30.4	
9.0		40.8	56.8	
9.1		47.5	3.7	
8.9	20	48.6	18.0	K
9.1		50.2	19.0	
9.8	21	20.3	48.1	
9.0		22.6	6.6	
9.0		26.9	41.8	K
9.0		51.4	54.5	
9.0	22	5.6	49.4	
10		38.9	45.9	

81—100

	0h		−11°	
m	m	s	′	
9.4	22	48.0	59.8	
10		57.6	16.3	
9.4	23	11.0	46.4	
10		19.2	9.0	
8.8		52.3	39.6	
10	24	18.7	17.7	
9.1	25	17.3	57.5	
9.8		46.6	28.7	
9.1		53.4	31.5	
9.3	26	13.6	46.6	
9.5		17.8	15.5	
9.6		18.9	20.9	
9.6		19.7	39.8	
9.5		45.9	31.1	
9.2		47.6	44.0	
9.8	27	10.3	44.8	
10		20.0	59.1	
9.6		23.6	0.0	
9.4	28	3.7	48.5	
9.4		27.3	4.1	

101—160

	0h		−11°	
m	m	s	′	
9.5	28	31.0	47.5	
9.1		32.4	15.0	
8.6		42.3	9.2	
8.9	29	1.8	9.9	
7.5		31.5	55.3	K
9.3	30	44.1	38.1	
9.7		45.3	32.7	
9.2		47.5	26.5	
7.8	31	13.1	29.3	K
9.8		42.0	29.0	
9.5		53.4	53.7	
9.4	32	16.7	37.7	
6.9		24.2	56.6	K
9.8	33	4.8	14.4	
9.7		6.8	8.6	
9.1		44.7	17.0	
9.8		45.3	47.1	
9.1		48.3	4.5	
9.8	34	3.8	41.7	
9.5		31.6	29.6	
9.8		32.4	21.6	
9.5	35	22.7	0.9	
9.5		24.8	45.1	
10		34.2	45.3	
8.3		42.8	17.6	K
9.5	36	33.2	24.3	
9.5		43.3	18.0	
5.0		51.9	24.6	Sj
9.6		53.4	19.7	
10		58.0	44.3	
9.5	37	10.6	5.9	
9.2		18.6	25.9	
10		41.3	27.4	
9.5	38	9.9	51.2	
8.3		15.3	52.8	K
9.6		28.0	47.5	
10	39	33.2	59.8	
9.3		38.1	24.0	
8.0		41.2	57.2	K
9.1	40	7.8	10.9	
9.5		24.4	16.1	
8.0		31.3	41.8	Sj
9.0		45.4	39.7	K
9.5		57.3	50.0	
10	41	5.7	28.7	
10		36.5	33.2	
9.5		46.9	11.8	
10		50.5	35.6	
8.0	42	16.4	45.4	K
9.5		19.1	43.8	
9.5		20.8	36.4	
9.4		35.0	17.7	
5.8		51.2	25.9	K
9.2	43	22.4	40.9	
9.5		34.0	40.1	
10		40.3	12.3	
9.5		48.8	46.3	
9.6		50.9	37.9	
9.5	44	7.0	13.1	
9.6		9.0	40.9	

161—220

	0h—1h		−11°	
m	m	s	′	
9.3	44	51.9	5.7	
9.7		57.1	27.3	
9.0	45	0.4	31.4	Sj
9.1		12.1	39.8	
10		48.3	6.5	
9.3	46	0.5	47.0	
9.0		19.3	27.8	
10		34.7	39.1	
9.6	48	2.5	41.2	
9.3		12.9	53.8	
8.5		15.4	32.1	Sj
8.7		22.0	50.5	L
9.0		33.3	24.3	K
9.0	49	20.6	33.6	
9.8		39.0	29.1	
9.1		41.0	5.2	
8.0	50	15.7	15.5	Sj
9.5		44.2	6.5	
8.9		49.3	53.9	K
9.7	51	14.5	48.5	
9.0		31.4	38.2	
9.8		32.1	15.7	
10		39.0	46.9	
9.4	52	39.1	25.0	
9.9		58.9	55.0	
10	53	22.8	45.6	
10	54	1.8	13.1	
8.7		19.7	0.8	K
10		24.2	29.7	
9.4	55	0.0	37.6	
8.2		1.7	26.6	K
9.3		5.3	11.7	
9.2		32.3	18.8	K
9.9		39.3	9.0	
8.7		55.1	14.4	K
9.1		58.4	33.0	
9.5	56	10.9	56.5	
10		16.8	8.7	
9.9		36.8	59.3	
9.9		39.7	55.3	
9.5	57	20.3	30.5	
9.7		44.0	14.0	
9.4	58	4.4	0.0	
9.5		27.0	38.0	
9.5		41.2	58.4	
9.4		42.2	47.1	
7.3		51.1	45.5	K
9.8	59	28.6	25.5	
9.8		37.1	38.9	
9.0		47.9	55.5	
8.8	0	8.7	20.8	
9.5		23.4	13.4	
9.5		38.4	15.7	
9.7	1	48.3	11.5	
9.3	2	0.3	37.3	
10		0.9	51.1	
8.5		12.3	36.0	K
9.3		30.6	19.2	
9.8		34.4	43.0	
8.6		58.7	7.6	

221—280

	1h		−11°	
m	m	s	′	
9.7	3	26.9	40.5	
9.6	4	12.8	5.6	
9.5		55.9	29.8	
7.7	5	1.9	42.8	K
9.8		13.0	28.5	
10		13.0	52.6	
8.6		16.7	4.4	K
9.2		35.4	29.2	
9.8	6	18.5	56.0	
9.5		48.4	35.5	
10		50.5	47.8	
9.5		55.8	31.2	
9.4	7	0.3	40.7	
10		6.5	0.7	
9.5		25.4	24.1	
9.3	8	1.9	15.2	
8.8	9	37.0	1.8	K
9.0		58.6	31.4	
9.4	10	0.7	54.4	
9.5	11	13.6	54.6	
9.5		38.8	4.2	
8.4		45.8	44.3	K
9.3		51.0	13.4	
9.5	12	9.5	17.8	
8.8		18.1	26.4	
9.4		57.5	4.3	
9.5	13	8.7	11.9	
6.3		15.2	59.6	K
9.5		17.6	10.5	
9.0		34.5	46.8	
10	14	3.1	41.6	
10		21.2	30.7	
9.9		31.6	26.4	
9.8		38.7	37.4	
8.3	15	15.2	22.2	K
9.2		38.9	46.7	
10		38.9	12.1	
9.1	16	11.8	2.7	
9.0		23.6	30.1	
9.3		35.7	28.5	
9.8	17	1.1	21.4	
9.6		2.7	13.8	
9.8		7.6	16.1	
9.5		9.7	31.2	
8.9		26.2	22.4	K
7.8		36.0	11.2	K
8.7	18	22.1	44.7	
9.3		47.7	51.0	
9.8	19	3.3	40.4	
9.8		30.7	42.0	
9.8	20	7.3	18.0	
6.2		33.3	39.4	K
9.5		49.4	37.7	
9.9		57.8	32.4	
10	21	27.4	44.6	
10	22	4.7	49.3	
8.5		6.3	2.2	K
8.9		39.2	40.0	
8.0		43.6	18.6	K
9.2	23	0.9	23.4	

281—340

	1h		−11°	
m	m	s	′	
9.9	23	15.0	51.1	
10		25.2	21.5	
8.8		25.4	35.7	K
9.5		54.4	24.4	
8.2	24	2.5	38.7	K
9.0		5.5	51.9	
9.8		15.8	5.5	
9.4		16.7	22.4	
9.3		23.1	56.6	
7.3		36.2	0.2	K
8.0	25	19.8	2.7	K
9.3		27.4	23.0	
9.5		36.5	38.5	
9.5		59.7	35.0	
9.3	26	32.9	57.7	
9.7		44.2	1.7	
9.7		47.8	28.0	
9.3		48.2	9.5	
9.7	27	7.8	27.6	
9.8		47.6	57.7	
9.7	28	0.0	14.8	
9.1		14.6	45.7	
9.3		22.7	7.4	
8.9		39.8	26.4	
9.5	29	13.1	36.2	
8.4	30	18.1	4.0	K
9.3		22.1	25.3	
9.0		26.7	33.5	R
9.5		34.8	46.1	
9.8		40.9	25.5	
9.2		44.6	28.4	
7.9		54.1	4.4	K
8.5	31	27.8	26.0	K
9.5		43.0	12.8	
7.8		49.6	13.9	K
10	32	15.7	19.5	
8.5		15.7	32.3	K
9.0	33	10.6	10.5	K
9.8		54.2	24.0	
9.1	34	0.4	50.4	
9.6		34.7	21.6	
10		47.9	10.0	
8.5	35	2.3	49.8	K
9.4		5.8	0.7	
9.5		7.5	36.0	
9.5		16.7	36.1	
9.5		32.3	22.1	
9.5		46.9	49.2	
8.5	36	11.2	48.4	K
9.8		14.6	57.3	
9.5		38.7	21.4	
9.8	37	7.1	40.2	
9.7		15.5	1.1	
9.5		33.4	55.7	
9.5		49.8	37.2	
9.2		57.2	30.3	
9.5		58.3	33.0	
8.9	38	25.9	0.5	
9.6		53.4	30.6	
9.5		57.0	49.1	

341—400

	1h		−11°
m	m	s	′
7.3	39	21.9	19.0
9.8		30.0	55.4
9.3		35.4	25.7
9.9		52.7	48.7
9.5	40	20.0	1.4
8.7		36.6	42.5
9.8	41	6.2	0.5
9.0		36.9	33.1
9.1		43.4	36.0
9.9		53.4	25.8
7.0	42	15.7	25.5
4.7		27.7	24.1
8.1		34.3	5.4
9.3		47.8	29.0
9.9	43	41.5	44.5
9.4		42.4	21.7
9.5		44.3	14.7
8.8	44	14.4	13.3
3.5		18.1	3.0
9.2		26.6	0.8
9.0	45	24.3	10.4
9.5	46	3.3	5.1
9.1		12.4	28.4
7.5		30.3	7.9
9.6	47	3.9	8.9
9.5		20.0	25.6
8.5		20.5	44.5
9.3		23.4	3.6
10		30.2	59.5
8.9	48	0.5	27.5
9.8		15.2	52.2
9.5		37.5	21.0
9.3	49	2.8	40.7
9.9		38.5	29.2
9.5		46.1	4.9
9.4		46.9	0.6
10	50	17.7	10.8
8.9		22.5	53.7
8.9	51	2.6	9.3
8.5		8.1	24.2
9.3		16.0	10.6
10		16.2	30.9
9.2		55.5	43.0
9.3	52	2.9	21.9
9.3		16.0	9.5
7.5	53	58.7	44.9
9.1	54	22.6	4.6
9.8		36.9	4.3
9.4		44.4	50.0
9.4	55	25.7	47.4
9.3		50.4	57.3
9.5	56	8.1	8.2
9.2		38.4	48.6
9.6		51.8	48.3
9.6		52.6	10.7
9.5	57	2.4	21.9
9.0		2.7	42.8
9.5		21.3	33.3
9.8		31.2	21.9
8.0		55.9	32.8

401—460					461—520					521—580					581—640					641—700				
	1h—2h		−11°			2h		−11°			2h		−11°			2h—3h		−11°			3h		−11°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.4	58	7.7	16.3		9.0	19	25.7	10.6		9.3	38	36.3	27.5		9.3	56	46.3	55.2		9.5	12	40.7	8.8	
9.3	59	45.8	18.2		9.4		33.5	57.0		8.6		38.1	43.4	K	9.3		53.4	58.8		9.8	13	11.9	46.7	
9.5		49.0	45.1		8.9	20	26.5	48.0		9.5		59.0	12.2		8.8	57	10.3	1.3	K	9.6		26.3	0.6	
9.0	0	14.3	14.4	K	9.0		38.3	14.2	K	10	40	47.2	42.0		9.3		27.5	19.5		9.8		54.3	40.7	
9.2		15.2	12.2	K	9.4		52.2	7.5		9.8	41	9.4	0.2		8.7		33.5	34.6	K	8.6	14	31.5	35.6	
9.1		22.6	51.4		9.4	21	19.9	26.2		9.4		10.7	45.8		9.1		37.0	29.1	K	8.8		35.1	44.6	Sj
9.4		24.0	40.7		8.6		32.8	16.8	K	9.1		24.2	49.8		9.4		46.9	55.9		9.3		41.8	22.4	
9.2		31.7	10.9	K	7.0		44.1	59.9	L	9.1		54.0	7.2		9.8	58	5.3	38.8		10		52.4	23.7	
9.3	1	1.6	58.0		9.5		49.4	38.5		8.0	42	18.8	9.1	K	9.2		11.2	43.4		9.8		53.9	46.7	
9.8		26.5	41.4		8.1	22	19.9	45.0	K	9.4		24.2	23.2		9.5		27.6	37.7		9.0	15	25.3	12.3	
9.6		28.3	8.4		8.8		27.7	59.5	K	9.5		29.1	20.3		9.9		49.9	4.6		9.8	16	12.4	29.0	
8.7		38.5	41.2		9.3		44.0	56.1		9.5		49.4	28.8		8.9		57.9	54.7		7.5		19.7	51.7	Sj
10		50.2	43.7		9.9	23	2.7	20.0		9.1	43	1.1	16.9		9.6	59	19.7	45.2		9.0		28.5	55.1	K
9.5	2	8.6	59.6		9.1		57.5	30.8		9.8		10.4	41.4		9.5		27.6	40.3		9.1		33.8	46.4	K
9.3		13.3	13.5		9.3	24	9.1	14.3		9.8	44	7.1	9.9		9.5	0	5.6	33.9		9.4		45.4	22.4	
8.4		38.5	6.4	K	8.9		28.4	39.5		10		15.6	2.3		9.6		31.5	32.3		9.0		56.7	23.3	Sj
9.5	3	18.3	52.6		9.5		57.6	33.6		9.6		19.2	40.5		9.7	1	7.0	33.0		9.8	17	5.0	42.5	
9.8		24.4	22.2		8.6	25	48.6	17.3		9.3	45	17.3	42.0		10		32.9	44.8		9.5		36.9	29.9	
9.5	4	0.1	50.8		8.8		51.7	7.6		9.9		45.3	44.8		9.2		46.7	35.6		9.5		51.9	29.6	
9.7		29.5	4.7		9.2	26	11.2	1.1		9.8		46.2	9.4		9.8		49.1	18.0		9.7	18	7.2	40.7	
9.7	5	8.7	44.4		8.7		13.1	6.1	K	9.8	46	4.3	26.7		9.8	2	15.5	11.7		9.4	19	26.5	30.7	
9.3		27.9	13.0		9.4		16.1	58.2		9.5		5.0	24.6		9.1	3	16.7	44.1		9.8		45.0	16.0	
9.1	6	6.9	10.7		9.7		19.4	23.4		9.4		7.8	27.1		7.3		52.7	40.5	K	9.4	20	13.4	47.9	
10		23.3	1.7		9.2	28	8.9	32.5		9.5		8.9	37.0		8.5	4	1.2	39.2	K	9.9		18.4	7.0	
9.0		37.6	12.5		9.7		11.1	32.4		9.7	47	4.6	53.9		9.6		14.9	58.0		9.9		56.9	8.6	
8.5	7	16.9	20.8	K	9.7	29	1.1	22.2		6.8		6.4	1.8	K	9.5		38.5	0.8		9.9		59.4	8.6	
9.5	8	10.8	28.7		10		4.5	36.0		7.6		13.9	40.7	K	9.2		55.3	54.4		6.0	21	5.7	47.3	Sj
9.5		44.0	8.2		9.3		6.3	33.0		10		42.7	48.0		10	5	24.1	10.6		9.2		22.3	30.0	
9.6	9	0.6	9.1		7.2		15.4	48.0	K	9.7		46.7	16.6		9.3		40.8	36.9		9.3	22	1.2	55.1	
9.5		12.7	34.6		10		35.6	43.5		10	48	0.0	46.5		9.9		42.2	26.1		9.3		19.6	54.0	
9.3		21.4	43.5		9.5		35.9	51.5		9.4		41.3	19.9		9.5	6	5.0	6.8		7.6		21.4	3.7	Sj
9.1		59.3	55.4		9.0	30	4.4	27.2		9.7		45.7	43.9		9.1		5.7	3.9		9.4		47.1	48.1	
9.4	10	10.2	41.3		8.1		7.5	49.9	K	9.5	49	2.1	54.5		9.8		12.1	38.5		8.1	23	3.6	38.7	K
9.8		59.5	2.1		9.5		14.2	45.0		9.2		7.7	41.9		9.6		29.3	39.8		9.7		13.6	43.5	
9.2	11	7.3	56.0		9.8		35.3	12.4		9.4		16.5	12.3		9.3		35.2	28.6		9.1		42.7	51.7	K
9.0		25.6	52.2		9.5	32	9.9	33.9		9.8		46.7	59.6		9.9	7	57.3	41.4		9.1		47.3	56.7	K
9.6		25.7	38.9		9.8		18.4	3.5		9.4		47.1	4.7		9.3	8	1.3	44.3		9.8	24	7.3	57.0	
9.7		44.0	13.0		9.7		38.0	43.9		9.1		49.7	0.0		9.5		11.1	9.5		9.0		17.7	53.2	Sj
9.0	12	8.2	19.9	K	10		53.4	30.4		9.7		51.5	24.4		9.1		40.9	42.2		8.5		18.6	25.7	Sj
8.2		21.4	17.2	K	9.6	33	31.2	47.5		9.3	51	12.1	1.4		9.6		58.8	27.9		9.5		56.7	54.4	
9.3		30.3	25.7		9.6	34	9.7	40.2		9.4		17.7	4.1		9.5	9	7.4	54.4		10	25	14.2	0.1	
8.8		48.7	3.1	K	9.3		12.4	18.7		9.3		23.9	44.3		9.1		12.7	28.4		8.9		22.5	14.0	Sj
9.4	13	33.9	50.9		9.4		38.7	48.3		9.8		28.0	2.7		10		15.2	8.5		8.7		26.0	43.5	
9.4		50.1	21.3		9.1		40.4	8.6		8.8		54.8	32.1	K	8.8		16.8	23.4		9.2	26	12.9	0.9	
9.4	14	11.8	36.3		9.3		56.1	3.1		9.8		56.5	1.6		9.0		18.2	45.4	K	9.0		18.8	39.7	K
9.3		13.7	36.5		9.2	35	24.9	12.2		9.0	52	18.8	25.9	K	9.9	10	7.4	48.8		9.4		19.2	31.2	
9.5		46.9	5.5		8.7		28.8	24.7	K	9.3		26.3	6.6		9.0		17.2	42.2	K	9.7		54.0	5.9	
5.5		57.7	26.6	B	8.7		39.6	1.4	K	8.1		30.3	15.4	Sj	10		19.5	56.3		9.5		59.5	8.9	
9.4		57.9	6.4		9.6		48.0	22.6		9.4		50.2	54.8		9.5		21.7	43.1		9.5	27	7.2	41.3	
9.7	15	13.9	51.5		9.3	36	26.6	38.1		9.4	53	11.6	45.0		8.9		24.3	35.2	K	9.5		22.1	29.7	
8.9		15.3	47.2		9.5		28.5	9.7		8.5		22.2	52.2	K	10		32.9	34.3		8.8		41.6	16.9	Sj
9.1	16	5.7	20.5		9.4		33.3	58.4		9.4		55.8	44.6		8.7	11	2.8	6.2	K	9.5		51.7	33.9	
9.2		9.5	54.0		10	37	14.9	13.4		9.1	54	5.2	2.7		9.2		3.1	50.8		9.5	28	14.6	1.7	
9.5		33.8	36.1		9.2		33.5	1.0		9.8		41.0	35.2		9.2		5.7	53.6		8.5		37.3	33.4	K
8.8		47.6	1.6	K	9.4		45.1	34.7		9.5		46.4	16.3		9.5		39.9	53.8		10		51.2	31.9	
9.5		54.2	23.8		9.2	38	5.4	40.3		9.5	55	21.5	0.4		9.7		53.8	28.0		5.8	29	2.8	41.1	Sj
8.8	18	7.4	8.1		9.4		23.0	18.6		9.3		26.1	5.1		9.5	12	14.3	27.5		9.5		32.0	54.1	
9.5		39.7	43.8		9.6		34.5	1.3		9.2		35.0	28.8		9.1		22.9	33.6		9.5		35.6	59.3	
8.0		46.3	17.3	K	9.1		35.4	22.6		7.5	56	33.5	32.7	K	10		26.9	53.0		9.8		46.7	34.1	
9.1	19	11.8	46.3		9.0		36.0	18.8	K	9.4		38.9	18.4		7.8		40.0	56.1	Sj	9.5	30	0.7	21.0	

701—760				761—820				821—880				881—940				941—1000			
	3h	—11°			3h—4h	—11°			4h	—11°			4h	—11°			4h	—11°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.4	30 22.0	52.1		9.5	48 45.0	31.4		7.8	3 52.8	42.8	K	8.7	21 9.5	29.8	B	9.8	35 47.5	21.3	
9.2	30.3	34.5		8.3	49 17.3	5.2	Sj	9.5	54.5	35.9		9.2	34.7	16.2		9.4	36 6.8	37.5	
7.8	31 25.6	40.7	Sj	9.4	36.4	44.0		9.6	4 13.4	35.9		9.8	48.9	53.1		9.9	15.7	44.1	
9.8	32 4.6	38.9		7.2	38.1	16.6	B	9.1	32.2	47.2		9.6	56.5	24.1		9.9	56.8	34.9	
9.4	17.8	36.2		9.5	50 6.3	4.9		8.9	46.3	17.8		9.7	56.5	4.3		9.0	37 3.7	27.7	
7.0	57.2	25.0	K	9.3	17.4	50.4		9.8	5 32.3	41.3		8.2	22 4.1	22.6	L	9.9	10.2	35.4	
9.6	33 10.3	42.1		9.6	25.7	24.3		9.5	37.6	32.4		9.8	26.7	2.9		9.3	13.3	0.0	
9.8	26.5	48.4		8.8	41.7	52.7	Sj	9.0	55.0	43.0		9.6	37.8	41.7		10	38 2.3	59.6	
10	27.2	45.3		9.6	52.9	11.7		8.6	6 4.6	29.8	K	9.3	49.2	38.0		9.3	16.7	2.6	
8.3	40.0	45.0	Sj	8.0	52 7.2	51.3	Sj	9.8	29.6	13.8		9.1	51.2	1.8		9.8	21.8	7.6	
9.5	34 19.0	20.7		9.5	33.3	45.0		9.1	36.5	24.5	K	8.1	23 25.9	52.6	K	9.5	26.5	49.8	
9.1	20.7	13.1		9.3	53 1.1	37.0		9.4	7 0.7	40.7		10	36.3	54.6		9.4	35.6	25.8	K
9.4	34.9	6.0		9.8	1.8	31.5		9.2	2.5	17.8		9.5	51.2	56.0		9.1	39.9	6.0	
8.9	36.2	21.3		9.8	9.4	54.9		9.3	15.3	31.2		8.9	55.6	15.5		10	39 13.8	59.2	
9.1	53.6	20.3		9.9	10.9	56.4		9.0	42.5	19.0		9.6	24 4.8	59.4		7.3	21.7	49.7	Sj
8.5	54.5	9.2	Sj	10	19.5	8.3		9.4	8 1.4	43.5		9.7	10.1	31.8		9.8	50.7	54.5	
10	35 12.3	22.2		8.6	21.0	4.9	K	9.9	3.2	26.8		9.8	52.6	8.6		9.3	53.5	3.6	
9.7	23.4	47.4		9.3	21.4	42.2		9.3	3.3	40.9		9.4	25 22.0	24.2		9.1	40 1.0	14.4	
9.5	34.1	42.5		9.8	54 20.1	4.9		9.4	54.7	37.7		8.7	26 27.2	8.5	K	9.8	1.9	12.6	
9.2	36 11.4	35.4		10	25.4	56.0		9.8	9 4.3	58.2		6.5	30.9	5.6	Sj	9.4	40.4	21.3	
9.9	12.2	17.5		9.0	36.5	43.9		9.4	41.8	56.5		9.3	41.0	24.6		9.1	41.6	20.6	K
10	37 13.8	16.6		9.1	55 4.4	49.2		10	53.2	28.8		9.0	53.2	59.4	K	10	48.9	12.4	
10	15.0	20.8		9.5	16.0	10.4		9.8	10 5.2	23.8		9.2	27 6.0	44.0		9.8	53.7	46.7	
9.3	46.0	14.3		9.1	37.5	18.7		9.4	7.1	37.1		8.5	51.6	56.4	K	9.1	41 3.1	50.4	
9.9	46.3	42.4		8.5	40.2	49.2	Sj	9.6	7.5	17.7		9.2	53.3	46.0		9.2	10.9	11.2	K
8.1	47.6	14.0	Sj	9.4	41.4	27.1		9.2	40.9	27.4		10	28 9.9	15.3		9.0	21.6	26.0	K
10	38 18.6	25.9		9.0	54.6	20.5		9.4	11 7.6	10.1		8.9	38.0	52.6	Sj	9.3	27.5	19.6	
9.9	24.9	44.2		9.0	56 5.5	19.6		9.4	22.8	21.5		9.4	46.0	23.2		10	31.5	46.2	
9.8	36.8	45.4		9.2	21.1	3.4		10	34.7	12.8		9.6	29 26.9	3.1		9.1	37.8	7.8	K
10	58.1	14.6		9.3	42.1	26.3		9.7	12 1.4	24.9		9.1	31.5	54.6		9.6	45.1	50.9	
9.4	39 27.2	35.0		9.0	57 1.4	18.0		9.9	25.8	51.6		8.5	35.2	33.5	Sj	9.6	42 18.3	51.4	
9.2	32.1	22.9		9.5	9.5	59.9		9.8	35.7	50.9		9.4	38.4	31.7		8.9	20.2	43.2	
9.9	44.0	0.0		9.9	26.0	40.8		9.5	43.4	17.4		10	58.0	54.6		9.8	28.1	21.7	
9.9	46.3	1.6		10	44.8	52.5		9.8	45.3	44.6		9.5	30 0.9	22.7		9.5	47.8	30.1	
9.5	40 15.4	27.6		9.4	51.0	9.0		8.6	13 18.4	54.5	K	9.3	47.1	31.4		9.5	47.8	47.0	
8.2	15.5	56.6	Sj	9.8	58 6.9	47.8		10	37.6	9.7		9.8	55.4	19.6		9.5	59.8	7.4	
9.5	21.2	31.7		9.2	24.0	56.5		9.0	14 10.9	58.6	K	9.5	31 2.3	16.4		9.6	43 9.9	58.9	
9.9	30.7	15.1		9.3	51.2	0.7		8.0	14.3	50.7	K	9.4	4.0	26.5		9.2	47.3	57.2	
9.2	47.3	32.1		9.5	59 18.3	4.9		10	15 29.9	29.4		10	16.7	57.5		9.8	54.3	33.4	
10	50.0	4.2		9.6	53.3	55.9		9.6	32.2	18.0		8.3	17.8	27.4		9.8	55.6	58.5	
10	58.5	51.2		10	0 11.4	52.2		9.8	36.3	51.9		9.1	21.8	40.9		8.0	44 23.8	6.9	L
9.5	41 53.2	16.4		9.1	44.5	46.2	K	9.1	37.9	25.0		9.3	38.3	41.2		8.5	24.7	13.0	B
9.4	42 19.4	47.4		9.0	45.1	7.6		9.0	51.9	49.3		10	51.4	5.5		9.5	45 21.2	5.6	
9.8	22.7	41.8		9.4	46.4	31.9		9.5	16 9.7	40.1		9.5	32 3.2	7.6		9.6	29.8	40.5	
8.5	43 10.8	34.9	Sj	9.0	1 3.6	22.7		9.4	27.0	10.0		9.3	3.3	5.3		10	31.1	22.5	
9.5	15.6	7.6		9.5	6.5	58.0		9.0	17 4.4	56.5		10	31.1	16.9		9.4	32.1	12.9	
10	28.1	4.9		9.0	7.3	6.9		9.4	7.2	27.6		10	37.5	51.8		9.2	44.0	53.4	
9.5	44 40.9	47.2		9.5	57.9	57.5		9.5	10.6	17.1		9.1	41.2	59.2	K	9.8	53.4	33.0	
9.9	46.4	22.8		8.8	2 4.9	19.1	Sj	9.2	11.3	21.5		8.9	43.7	21.9	K	9.5	46 0.8	56.7	
9.5	45 7.2	9.2		10	14.4	43.8		9.3	35.1	16.8		9.2	53.7	44.2		9.6	5.4	59.4	
9.1	15.8	19.2		10	40.3	28.5		9.4	18 20.9	54.5		9.3	33 3.4	14.0	K	9.5	29.3	31.6	
9.5	29.7	56.2		10	46.8	58.4		9.1	56.8	23.4	K	9.7	35.8	46.3		9.8	47 8.9	20.6	
9.1	43.3	18.6		9.2	54.3	0.0		9.0	19 10.0	30.0	K	10	53.4	47.9		8.3	15.7	21.1	K
9.3	46 33.4	24.7		9.1	56.9	39.4		9.5	13.5	31.2		9.3	34 11.1	27.5		9.5	27.9	34.7	
9.8	46.3	59.7		9.6	3 11.9	38.5		10	22.3	19.1		9.0	33.0	20.6		8.9	48.2	50.6	
9.5	49.4	26.7		9.3	16.2	14.6		9.7	46.0	24.2		9.0	35 1.7	59.5	K	9.6	57.4	37.3	
9.3	47 13.0	43.0		9.4	36.3	33.9		8.7	20 11.0	39.2	K	9.5	2.9	12.7		9.5	58.1	3.9	
9.2	29.5	34.3		9.5	46.2	56.8		10	19.8	21.7		8.3	10.0	52.2	K	9.0	48 6.0	36.7	K
8.9	53.3	7.5	K	9.2	46.7	26.4		9.7	42.4	24.2		9.1	21.1	55.3	K	9.6	8.9	8.8	
9.3	48 2.4	23.8		9.7	46.7	0.9		7.5	57.5	26.6	L	9.5	24.8	35.7		8.4	19.4	59.1	

1001—1060				1061—1120				1121—1180				1181—1240				1241—1300			
	4h	−11°			4h−5h	−11°			5h	−11°			5h	−11°			5h	−11°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.0	48 41.3	57.3		9.5	59 20.3	24.9		10	10 6.9	32.5		9.7	21 23.3	25.1		9.0	30 42.1	59.2	M
8.7	45.3	6.8	K	9.5	31.3	23.6		10	16.6	40.7		9.0	35.6	37.2		9.8	43.6	31.6	
8.7	45.5	37.0	K	8.8	38.7	50.9	Sj	10	21.8	51.4		9.5	38.3	19.8		9.3	52.0	54.4	
10	49 8.5	39.1		9.0	39.1	13.8		10	28.8	51.8		9.0	42.2	11.8		9.0	31 25.7	37.4	
10	11.9	5.6		9.5	51.6	43.8		9.7	46.9	56.7		9.2	43.1	39.5		10	25.9	51.8	
9.5	19.9	9.0		9.3	54.2	18.3		9.0	56.1	8.0		9.5	58.1	6.9		9.2	33.4	20.8	
9.5	31.7	48.7		9.0	0 11.8	55.3	K	9.5	57.6	26.9		9.4	59.7	0.8		9.9	46.2	43.3	
8.5	33.0	17.0	Sj	9.5	14.1	41.9		10	11 28.4	38.3		9.0	22 10.5	22.0		10	56.4	19.5	
10	50.6	47.2		9.5	29.0	5.6		10	55.3	22.3		9.3	14.6	32.7		9.0	32 15.2	7.0	M
9.5	51.9	36.4		8.5	35.6	45.0		9.0	12 13.3	17.4	K	9.2	17.6	30.5		9.5	25.3	46.3	
8.5	56.4	10.5	L	9.5	38.0	8.0		9.5	28.7	42.9		9.5	30.9	47.9		8.0	37.4	17.1	K
8.6	50 23.0	14.5	L	9.5	53.8	58.5		10	36.7	10.6		9.5	39.8	45.2		9.0	57.6	31.8	M
8.4	36.2	21.6	L	9.5	1 1.2	19.2		9.3	47.3	21.5		9.7	52.7	36.3		9.3	33 19.0	53.6	
9.3	51.9	41.9		9.3	5.6	13.9		8.2	53.1	10.7	K	9.5	23 17.9	48.7		9.0	30.4	19.7	K
10	51 1.9	2.9		9.5	6.3	27.2		10	58.3	20.1		8.3	20.6	33.1	L	9.0	40.1	59.5	
8.7	6.3	51.9		10	27.2	16.4		9.5	13 2.9	54.5		9.5	23.4	21.5		9.5	54.4	20.1	
10	26.8	56.1		9.5	39.7	53.0		9.4	3.1	39.8		9.0	31.9	52.6		9.0	34 6.1	57.2	
9.8	37.7	53.1		9.3	52.3	26.6		8.5	26.1	13.0	K	10	55.2	59.7		7.0	6.4	16.7	K
9.3	39.5	40.0		10	2 9.7	51.6		9.5	29.8	50.5		9.2	24 11.2	10.0		9.5	18.1	59.1	
9.0	52 16.0	37.2		9.2	13.1	10.5		9.0	38.7	43.8	K	9.2	39.4	18.9		8.8	22.4	3.9	K
9.5	18.2	28.5		10	23.8	54.7		9.5	40.6	8.9		9.6	40.6	56.2		9.7	27.0	14.8	
9.9	24.3	29.8		8.0	34.2	18.5	K	9.5	47.7	42.8		10	44.3	34.1		9.5	38.6	31.8	
9.5	35.9	53.0		9.0	42.0	8.7	K	9.5	50.3	22.3		9.4	57.4	18.4		9.5	41.7	38.5	
9.7	36.4	10.0		9.0	3 2.8	58.3		9.5	56.1	12.0		9.5	25 3.1	3.2		9.0	46.8	46.1	
9.8	46.1	12.5		9.5	7.1	1.9		9.5	14 7.1	38.8		9.5	26 3.8	40.7		10	35 34.6	32.3	
10	53 3.6	44.9		9.5	15.6	47.6		8.5	11.7	45.1	K	9.5	5.2	6.3		9.9	36.6	34.6	
9.5	25.6	45.8		9.4	20.7	51.6		9.0	46.6	37.5		9.5	21.2	7.5		7.5	46.8	42.0	L
9.0	26.7	30.9		8.5	28.5	40.0	K	9.4	59.9	54.0		8.8	32.9	32.3		9.5	47.1	29.9	
9.1	44.4	6.1		7.5	47.7	49.9	K	10	15 4.6	34.8		9.2	33.2	9.2		8.5	36 16.0	53.6	K
10	48.3	31.1		8.8	50.3	5.8		9.5	31.4	27.6		9.5	53.9	47.7		8.0	51.6	21.9	K
9.1	57.9	1.5		10	4 9.2	19.5		9.5	35.5	34.3		9.5	27 8.2	15.2		9.2	53.0	49.1	
10	54 11.7	44.9		10	18.7	53.4		9.6	16 0.7	43.7		9.0	13.2	6.2		9.2	54.1	57.1	
10	12.9	55.1		9.5	31.3	25.2		9.5	1.5	46.7		9.5	18.8	43.3		9.3	37 1.3	8.0	
9.5	14.2	18.2		9.0	42.4	30.1		9.7	6.9	56.1		8.0	19.3	27.8		10	51.0	51.4	
9.5	15.3	37.6		9.5	43.0	3.7		10	8.8	51.4		10	28.7	38.4		9.0	38 5.2	6.6	
7.0	15.9	25.1	K	9.5	58.0	26.5		9.3	13.3	29.3		9.5	31.1	59.8		9.3	16.0	48.8	
8.5	17.5	10.1	K	9.5	5 8.2	15.8		9.7	21.7	2.8		8.5	36.9	51.7	K	9.4	16.6	59.5	
9.3	39.3	40.2		7.8	9.0	8.2	L	8.3	46.3	20.1	K	9.2	54.6	32.9		9.0	22.0	47.8	
9.7	42.5	16.4		9.0	14.3	26.1		9.8	47.9	29.4		8.0	28 0.0	53.9	K	10	45.4	14.8	
7.0	58.5	9.1	K	8.0	29.8	58.7	K	9.0	54.2	56.3	M	9.5	1.8	45.9		10	39 13.8	37.1	
9.5	55 3.5	36.1		9.2	6 2.2	18.5		9.8	17 26.3	2.7		9.5	5.0	54.8		9.5	34.7	29.4	
9.5	4.9	0.0		10	27.8	52.9		9.7	48.3	18.1		9.4	7.8	41.0		8.0	42.9	4.9	K
9.5	13.0	10.6	K	10	29.1	10.0		9.5	52.4	27.9		9.1	23.4	19.6		9.2	44.9	42.9	
9.0	18.7	18.4	K	10	37.6	13.2		8.5	52.7	7.4	K	9.2	33.9	48.6		9.5	40 6.0	51.4	
9.6	40.4	57.0		8.5	40.3	29.3	K	10	18 1.3	21.7		9.5	41.9	51.7		9.5	15.8	38.8	
9.3	47.0	49.5		9.3	53.2	21.2		9.7	3.5	38.2		10	47.8	32.9		9.0	37.7	33.0	
9.2	56.3	50.1		10	57.6	1.5		8.5	25.4	26.7	K	8.8	29 8.0	56.6		9.0	38.1	27.2	
9.5	56 47.5	9.4		9.2	7 11.7	48.9		9.0	26.4	26.7	K	9.3	25.8	40.9		9.0	42.8	34.3	M
8.7	57 4.6	51.9		9.2	53.4	29.6		9.8	45.9	58.3		9.4	39.8	46.3		9.5	41 19.8	35.2	
8.7	8.2	44.4		10	8 1.3	23.3		8.8	19 17.2	2.7		9.5	42.3	10.6		9.5	23.1	55.3	
10	8.6	50.3		9.5	17.3	25.7		9.0	42.0	39.6		8.5	51.0	53.9	K	8.5	46.6	24.4	
9.5	44.0	9.6		9.5	26.7	47.0		9.6	43.8	45.3		9.7	55.4	24.4		9.5	51.9	45.1	
9.1	50.3	22.8	K	9.0	40.9	52.8		9.5	45.3	19.8		9.0	30 6.9	49.4		9.0	59.4	14.6	
7.8	58 0.9	53.7	K	9.5	55.1	7.3		9.5	20 3.9	57.7		9.0	17.6	32.0		9.7	42 13.8	34.3	
9.3	2.4	55.7		9.5	9 0.9	0.0		9.7	42.7	42.1		9.5	18.3	10.1		10	14.3	37.9	
9.7	8.2	17.6		10	12.8	50.6		9.7	46.9	59.1		9.2	20.9	48.5		9.0	16.4	9.8	
9.0	13.1	10.8		7.0	23.5	31.0	K	9.5	48.4	25.2		9.5	21.8	41.8		9.0	19.3	7.6	
9.5	51.2	17.8		9.0	33.9	58.7		9.5	57.7	42.2		6.5	23.0	52.1	K	9.8	43.1	53.5	
10	59 0.3	25.8		8.0	44.4	25.1	K	10	21 14.0	32.8		9.0	25.3	10.1		8.8	43 16.1	52.5	K
8.8	13.0	41.9	K	10	59.3	21.5		9.7	21.8	1.7		9.0	27.6	29.7		9.5	28.7	28.9	

1301—1360

	5h		−11°	
m	m	s	′	
9.7	43	48.6	46.6	
10		57.5	19.1	
9.5	44	3.7	31.2	
7.0		35.9	40.9	Sj
8.5	45	11.6	23.4	
9.6		19.9	42.5	
9.5		20.6	23.5	
9.0		29.1	57.9	
9.5		47.8	33.7	
9.5	46	3.3	6.1	
9.7		6.0	52.0	
9.1		10.2	58.4	
10		17.0	47.6	
9.8		19.6	54.7	
8.6		25.3	38.7	Sj
9.3		31.5	51.7	
9.5	47	5.0	50.3	
10		30.6	26.2	
9.5		40.8	38.3	
8.5		54.0	51.1	K
6.0		58.3	48.0	K
9.7	48	2.4	0.3	
8.9		9.7	20.8	
10		15.5	1.6	
9.3		48.8	15.5	
8.5	49	4.4	41.0	Sj
9.3		8.8	57.1	K
9.0		22.4	41.9	K
9.4		24.8	58.4	
8.0		41.9	17.7	L
9.5		50.8	58.8	
9.5	50	0.6	3.8	
9.0		3.5	47.2	
10		10.6	50.8	
10		11.4	40.1	
9.1		27.9	50.8	
9.5		31.9	19.5	
10		40.2	5.7	
10		48.1	26.5	
9.4	51	17.5	46.1	
10		21.1	28.2	
9.2		29.1	26.1	
9.5		35.0	22.1	
9.5		42.6	48.9	
8.5		49.1	3.6	K
9.0		58.8	16.3	
9.3	52	22.8	57.4	
9.5		27.5	45.8	
9.0		50.4	42.7	K
10		54.5	44.9	
9.0		57.4	40.0	K
9.0	53	7.4	39.1	K
9.7		26.7	53.3	
10		28.9	20.3	
9.5		31.8	59.1	
9.5	54	22.6	47.8	
9.0		28.4	42.4	
9.5		33.3	1.6	
8.8		50.1	2.5	
9.7	55	37.0	22.8	

1361—1420

	5h—6h		−11°	
m	m	s	′	
9.5	55	52.0	8.4	
9.5	56	1.8	14.7	
8.0		7.0	20.6	K
9.0		10.7	9.5	K
9.5		12.2	30.9	
8.5		20.7	53.2	K
9.2		46.7	6.7	K
9.4		49.7	9.4	
9.5		56.3	36.6	
10	57	13.8	10.3	
9.6		17.1	3.2	
9.2		26.7	9.4	K
9.5		37.8	59.4	
9.5		38.7	9.4	
9.0		55.1	28.2	K
9.5	58	6.4	38.9	
9.7		9.0	24.6	
9.7		36.9	17.9	
10		42.2	31.3	
10		42.9	18.4	
9.8		45.3	34.5	
9.0	59	23.2	31.3	K
9.0		57.7	56.6	L
10	0	1.6	48.6	
10		3.6	2.9	
7.0		4.7	9.3	K
9.0		14.3	37.8	
9.5		19.2	32.9	
9.2		22.6	3.0	K
9.8	1	0.5	45.9	
9.5		18.6	3.9	
9.0		38.1	27.5	K
7.2		38.7	7.5	K
9.8		40.2	12.5	
8.5	2	21.2	31.6	K
9.0		33.4	39.6	K
9.0		37.8	56.2	
9.7		47.3	37.3	
9.5		58.9	16.3	
9.5	3	0.1	25.7	
10		3.5	42.7	
10		28.5	45.4	
9.1		34.1	4.8	K
8.5		42.6	50.1	K
9.5	4	19.5	44.9	
9.5		26.7	6.5	
9.4		38.3	30.2	
9.4		52.8	49.8	
8.7	5	11.5	54.5	K
9.1		30.2	28.6	
9.5		32.8	42.2	
9.3		47.0	3.3	
8.5		56.8	9.3	K
10	6	15.4	59.0	
9.8		49.5	9.6	
9.8		55.5	20.0	
9.6		57.6	49.2	
9.4	7	11.3	32.4	
9.1		12.3	10.1	K
8.7		13.2	8.7	K

1421—1480

	6h		−11°	
m	m	s	′	
10	7	25.6	0.1	
9.5		27.3	59.9	
9.9		28.4	33.0	
9.3	8	3.4	14.4	
8.5		4.4	6.3	K
8.8		9.1	45.5	K
8.7		27.9	52.3	K
8.8		33.0	35.6	M
6.8		38.3	51.3	K
9.2		41.0	37.6	
9.8		49.1	31.2	
9.2		59.4	32.4	K
9.5	9	6.5	35.8	
8.8		40.7	6.0	K
10		48.8	27.3	
7.0		58.0	59.7	K
9.2	10	11.1	22.3	
8.5		36.0	19.9	K
9.8		54.8	32.4	
9.4		57.0	35.8	
9.5	11	2.1	39.3	
9.5		10.7	8.3	
9.7		23.0	51.7	
9.0		56.9	32.3	K
9.5	12	15.3	9.2	
9.1		24.8	51.7	
9.3		26.6	48.4	
9.8		30.7	7.6	
8.9		49.7	0.3	
9.6		53.9	48.1	
9.1		58.0	55.5	
10	13	17.6	0.5	
10		33.4	42.6	
9.3		42.9	13.2	
10	14	3.7	24.8	
9.6		11.9	37.4	
8.9		12.7	47.0	
8.8		15.5	37.1	L
6.8		20.1	45.3	L
5.9		39.0	42.3	K
8.7		48.9	0.6	K
9.7	15	4.5	46.0	
9.8		37.2	0.4	
9.3		41.0	17.7	M
9.5		41.4	36.2	
9.4		41.9	44.9	
10		51.2	17.7	
10		51.8	22.0	
9.2	16	16.4	45.8	
9.8		27.0	17.0	
9.8		30.6	51.0	
9.3		53.4	36.4	K
9.6		54.3	31.4	
9.4	17	2.1	39.9	K
9.4		7.0	36.3	K
10		7.9	27.0	
10		17.1	41.0	
6.0		24.1	27.0	K
9.7		59.5	29.3	
9.8	18	26.5	10.7	

1481—1540

	6h		−11°	
m	m	s	′	
9.0	18	32.6	30.2	
9.4		37.2	34.6	
9.8		48.4	12.7	
9.0		57.4	15.1	K
9.2		57.9	56.7	
9.0	19	2.1	10.2	K
9.4		14.1	23.5	
8.5		21.3	51.6	
9.4		37.3	12.1	K
9.1		53.2	48.1	
9.5		54.0	36.5	
8.8	20	4.7	7.7	K
8.8		29.8	45.2	Sj
9.8	21	10.5	4.0	
9.0		24.2	16.1	
9.4		24.6	22.2	
10		45.5	47.2	
8.9		49.3	51.2	
8.6	22	0.8	32.8	L
7.8		8.7	10.7	L
9.8		22.9	53.3	
9.4		24.4	35.1	
9.4		26.8	8.8	
10		29.4	25.5	
9.0		33.4	42.3	
8.0		41.1	22.4	L
9.8		51.5	48.5	
9.8	23	9.8	31.6	
9.8		9.9	53.9	
9.0		17.0	37.6	
9.4		20.7	2.4	
9.0		22.9	43.8	
10		23.7	26.4	
7.5		48.5	58.9	B
9.3	24	10.3	12.1	
10		11.5	52.5	
10		43.6	59.6	
9.5		51.4	45.5	
9.6		52.9	49.9	
7.0	25	59.3	3.8	K
9.1	26	0.2	25.9	
10		3.0	38.1	
9.6		5.3	51.5	
8.5		6.5	57.8	K
9.4		6.8	20.9	
9.3		23.7	48.8	
10		35.7	6.8	
10		42.7	41.3	
8.8		55.4	45.3	K
9.4		57.5	58.9	
9.1		59.5	37.6	
9.4	27	10.2	26.2	
8.3		16.6	21.7	K
10		22.3	40.6	
9.6		34.2	7.6	
8.1		44.7	6.7	L
10		56.0	19.7	
10	28	7.4	34.4	
9.1		12.7	25.0	
9.8		14.3	40.3	

1541—1600

	6h		−11°	
m	m	s	′	
10	28	20.7	6.0	
10		22.5	10.0	
9.2		30.9	6.7	
10		32.4	51.9	
9.5		33.5	56.1	
8.8		36.4	34.0	
9.0		41.4	53.0	K
9.1		52.0	42.4	
10		57.1	30.5	
7.5	29	6.9	15.8	K
9.2		19.4	42.0	M
9.5		32.7	26.6	
8.9		58.4	27.8	K
8.2	30	4.0	18.2	Sj
9.8		17.6	12.6	
10		19.2	12.4	
9.5		21.1	31.7	
9.1		24.3	14.0	K
9.7		40.8	52.8	
10		43.0	2.5	
8.7		45.0	20.2	M
9.2		47.3	14.0	
9.8		47.7	53.1	
8.5		51.3	33.5	K
9.8	31	2.9	33.5	
10		18.5	7.1	
10		20.0	44.7	
9.0		32.2	25.2	M
9.4		41.0	39.3	
8.5	32	15.2	8.2	L
9.9		17.0	34.9	
9.8		25.3	1.9	
9.4		25.7	12.1	
10		29.8	35.1	
9.1		30.5	56.7	M
8.0		42.6	54.7	Sj
8.2		46.5	34.5	
9.0	33	7.4	12.0	M
9.9		15.4	53.6	
9.4		16.3	48.5	
9.3		19.2	27.0	
10		27.0	16.9	
9.0		35.0	58.6	K
10	34	1.0	38.5	
9.5		12.5	43.0	
9.2		15.8	12.1	
9.8		28.5	49.3	
9.0		31.2	28.0	
10		35.6	47.8	
8.3		38.3	10.5	L
9.8		54.2	8.1	
10	35	10.1	22.6	
9.8		12.7	12.0	
9.0		16.7	25.7	
9.4		22.3	13.8	
9.5		28.9	47.0	
9.8		42.2	8.0	
9.4		45.6	40.4	
9.9		54.5	58.8	
9.7	36	7.8	11.4	

1601—1660				1661—1720				1721—1780				1781—1840				1841—1900			
6h		−11°		6h		−11°		6h		−11°		6h—7h		−11°		7h		−11°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.3	36 10.3	17.9		9.0	44 26.0	15.9		9.8	52 40.8	48.0		9.5	58 51.6	21.2		9.0	5 43.1	50.9	K
8.0	11.9	37.3	K	9.0	39.0	14.3	K	9.4	47.5	52.8		9.8	58.8	41.8		9.2	43.9	56.5	
9.8	22.3	38.4		9.6	43.1	32.7		9.5	50.8	43.1		9.5	59 17.0	17.6		10	47.3	3.1	
9.1	24.2	54.3	K	9.4	49.7	2.3		9.4	51.5	35.9		9.0	23.0	2.6	K	9.7	54.8	5.5	
9.5	26.6	18.0		10	45 6.5	14.4		8.5	53.2	46.1	L	10	28.9	30.6		8.7	6 0.2	50.0	K
9.5	26.7	16.1		10	7.1	9.7		9.5	53 2.0	11.8		9.5	35.6	37.7		9.4	0.6	3.2	
9.6	51.4	22.2		8.0	14.7	2.0	K	9.8	11.4	24.7		9.1	37.6	2.2	K	8.3	2.2	21.5	L
9.4	57.3	54.0		9.3	20.0	28.8		8.7	18.1	48.7	L	8.9	43.2	19.1		9.4	17.2	22.8	
10	37 2.6	50.0		10	25.9	0.2		9.3	25.4	36.1		8.7	46.0	14.0	L	6.3	19.4	0.6	K
9.4	5.9	16.3		9.0	31.2	22.2	K	9.2	30.6	31.7	K	5.8	51.8	4.0	Sj	9.5	35.7	21.5	
9.5	12.4	41.8		9.4	34.7	36.6		10	31.5	13.1		9.1	59.8	24.0		9.5	44.3	16.5	
9.3	18.8	11.0		9.4	46 7.0	29.4		9.8	34.5	50.2		9.8	0 2.9	39.3		10	7 41.2	50.5	
9.3	23.7	44.3		7.5	9.4	58.6	L	9.4	38.5	59.3		8.4	7.7	6.3	Sj	8.6	43.1	59.0	K
10	55.4	52.4		9.0	15.6	33.0		9.8	45.6	15.8		9.8	15.9	29.0		10	47.9	29.0	
9.7	58.2	47.4		8.3	29.4	2.9	K	9.2	50.8	2.6	K	8.3	29.4	57.9	K	9.4	54.8	42.1	
9.7	38 3.0	38.3		9.4	46.3	43.2		9.9	54.2	19.9		9.8	29.4	13.3		9.4	8 1.4	7.6	
9.1	6.1	39.6		9.0	57.5	30.1		9.5	57.8	4.7		8.9	30.1	44.8		9.5	3.1	51.5	
8.8	19.0	16.0	M	7.8	59.7	5.1	K	9.1	54 15.6	31.2	K	9.8	39.4	56.5		8.3	12.6	37.5	
9.5	21.9	32.9		9.3	47 16.0	57.3		10	23.3	36.3		9.4	50.7	8.5		10	23.9	31.3	
9.6	24.5	38.5		9.8	28.5	40.3		9.9	23.8	16.7		9.3	58.7	34.9		9.7	26.7	44.6	
9.2	27.3	0.0	K	4.0	28.8	51.1	L	10	31.0	29.4		9.1	1 7.2	41.5	K	10	45.1	36.1	
9.7	59.1	4.0		9.5	30.0	35.0		9.1	33.0	1.5	M	10	11.3	19.9		9.4	46.7	37.9	
9.4	39 1.6	51.3		9.9	30.2	31.2		9.8	38.4	7.5		8.5	12.0	22.1	K	8.4	9 6.0	0.6	L
9.4	10.0	16.5		8.7	46.4	12.3	K	9.8	49.0	29.0		9.4	15.2	48.1		9.1	19.9	30.1	K
10	18.6	44.7		9.3	48 12.1	24.7		9.3	56.6	1.0	M	7.6	17.1	41.8	K	9.5	29.2	57.6	
10	20.0	59.0		9.0	13.0	32.1	K	9.7	58.8	42.1		9.9	17.5	57.8		9.1	35.1	50.2	K
9.7	37.0	39.5		8.9	16.2	35.0	K	7.2	55 1.3	5.7	L	10	18.5	57.4		8.5	49.6	14.1	K
9.5	38.8	43.9		9.0	19.0	44.6	K	9.3	6.9	44.2		9.3	28.4	3.6		10	55.0	12.1	
9.4	45.3	31.6		9.0	22.1	14.9	L	9.5	7.2	49.3		9.5	32.7	30.8		10	58.3	44.7	
9 3	48.3	39.9		10	22.6	48.3		9.3	13.0	58.4		10	33.3	40.1		9.7	10 6.4	54.8	
9.5	40 10.4	55.3		9.6	26.2	35.2		9.8	13.7	33.2		9.4	33.5	44.1		9.5	7.5	56.6	
9.5	14.9	52.7		9.6	30.8	45.5		9.8	26.4	0.1		8.5	36.6	37.8	K	9.1	14.2	28.0	K
9.4	18.1	41.5		9.4	38.1	17.8	M	9.8	29.3	21.8		9.7	42.6	55.7		9.7	20.5	20.5	
9.8	31.0	46.3		10	40.9	26.3		9.8	35.8	29.4		9.8	42.9	47.0		7.1	21.0	46.3	L
9.8	46.9	19.4		9.2	57.2	40.7	K	8.7	54.6	14.9	L	9.5	2 1.6	7.7		9.8	42.0	31.3	
8.5	41 3.0	34.1	S	9.8	58.0	37.9		9.2	56 3.6	41.7		9.1	6.2	16.4	K	9.8	45.4	54.5	
9.0	4.2	34.3		9.2	59.5	40.5	K	9.4	4.4	34.0		9.5	6.5	0.3		9.5	50.6	52.2	
8.9	17.5	42.7		9.8	49 7.4	55.2		9.5	10.4	46.1		10	48.2	54.5		9.6	54.1	22.0	
9.8	19.8	15.5		9.2	11.7	21.1	M	9.8	24.5	13.4		9.3	53.1	50.6		8.9	11 2.6	42.1	K
9.5	24.1	28.4		9.7	22.6	44.6		9.0	55.7	20.0		9.8	55.9	50.6		9.5	7.6	22.9	
8.9	27.4	51.7		10	29.4	43.2		9.3	57 5.5	22.0		9.8	3 21.4	29.8		8.5	21.3	8.3	K
8.8	32.8	6.9	K	9.6	35.6	33.9	M	9.4	6.6	16.0		8.0	21.6	34.7	K	9.4	24.7	56.5	K
9.7	34.6	16.5		9.8	41.5	21.1		9.2	7.9	21.7		9.8	23.4	51.8		9.5	26.9	42.3	
8.6	47.0	41.3		9.5	50 5.9	57.4		9.7	16.4	12.4		9.2	34.4	0.9	K	9.7	12 17.1	53.0	
9.8	53.6	22.3		9.0	6.0	11.5	K	10	16.9	16.2		9.4	53.6	15.5		9.0	26.4	11.8	L
9.6	58.9	10.3		9.5	8.8	53.8		9.0	27.6	11.3		8.2	58.7	20.6	K	10	43.6	19.2	
9.6	42 7.6	41.5		9.6	21.1	33.6		9.7	34.3	7.0		9.0	59.9	31.1	K	9.5	45.4	21.7	
9.7	21.4	11.5		10	29.5	30.4		9.8	41.8	47.0		10	4 17.5	18.0		9.8	53.3	46.1	
9.8	33.5	11.5		10	38.2	43.5		9.5	42.2	36.3		9.7	27.7	16.3		9.0	54.9	57.0	
8.9	37.6	1.9		9.5	53.4	56.5		7.9	51.9	18.6	S	7.5	30.6	48.3	K	9.8	57.9	12.9	
9.6	38.6	7.1		9.8	51 6.0	16.2		9.0	52.7	46.0		9.8	32.4	8.0		9.0	13 8.4	38.8	
9.6	48.3	49.1		9.3	18.3	37.1		8.4	53.2	54.6	K	9.5	36.0	14.5		9.8	12.4	30.9	
9.5	54.5	15.5		9.4	29.2	20.0		8.8	56.2	2.5		9.8	5 1.1	5.8		9.4	16.3	28.6	
9.2	43 2.7	20.5		8.5	40.5	14.2	K	9.2	58 5.2	42.2		9.7	1.5	26.9		10	45.4	41.2	
9.0	7.0	32.5		9.2	55.5	29.9	K	9.3	5.3	26.1		10	14.6	46.6		9.5	46.4	43.0	
9.0	18.0	12.4		9.3	56.0	37.8	K	9.8	12.9	28.8		9.3	24.4	9.2		9.9	56.1	13.7	
9.3	53.8	24.0		9.2	57.4	46.6		9.4	20.1	45.1		9.1	27.0	48.7	K	9.8	14 7.1	38.8	
9.8	55.7	20.6		9.8	52 9.4	11.8		9.4	30.1	3.8		10	29.3	25.3		9.4	11.8	20.4	
9.5	57.2	46.1		8.8	23.9	28.4	K	10	31.7	23.9		10	33.2	22.7		9.2	11.9	24.7	
9.1	44 6.3	37.6		8.7	33.6	18.1	K	9.8	51.3	45.7		9.3	40.5	32.4		9.6	13.6	22.9	

1805: sehr roth

1901—1960				1961—2020				2021—2080				2081—2140				2141—2200			
	7h	−11°			7h	−11°			7h	−11°			7h	−11°			7h	−11°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.2	14 14.9	19.0		9.6	21 57.9	44.5		9.4	30 9.7	10.6		9.5	37 8.6	31.8		8.2	46 14.6	15.0	K
9.4	15.1	52.6		9.0	22 13.7	48.0	K	9.0	12.0	4.3		9.8	14.7	21.3		10	19.0	41.0	
10	24.5	17.4		9.7	18.1	56.3		9.5	12.7	37.4		9.8	31.6	10.5		9.0	22.5	43.5	
10	29.3	5.7		9.0	28.7	46.0	K	9.3	23.5	24.9		9.3	35.6	12.7		9.8	32.2	8.2	
9.5	33.9	30.7		9.4	35.0	21.9		9.0	23.8	8.8		9.8	42.6	15.2		9.4	34.4	54.8	
9.3	36.4	11.8		9.3	46.4	32.2		9.6	30.3	46.2		8.7	45.5	58.2		9.5	35.5	31.2	
8.7	52.0	33.7		8.9	49.0	3.6		9.5	31.1	50.0		9.8	38 3.0	56.4		9.5	36.6	24.7	
9.5	57.6	37.7		8.9	58.8	5.4		9.5	35.3	46.7		8.2	14.2	25.0	L	9.4	40.7	9.3	K
9.1	15 17.9	11.8		9.5	23 3.1	48.0		9.7	31 10.8	10.5		9.0	20.1	55.5		9.8	48.5	50.5	
9.5	30.7	23.2		9.6	4.4	59.8		9.9	22.1	50.8		9.8	37.3	47.2		8.3	52.3	53.4	Sj
8.6	34.3	43.6	K	9.5	16.9	30.6		9.2	23.2	51.7		9.1	41.2	36.4		9.5	56.9	21.6	
9.5	16 1.6	57.6		9.4	17.4	44.8		9.5	28.7	13.0		8.9	57.7	3.6	K	8.9	57.8	55.0	
9.3	5.3	49.8		9.4	37.1	59.8		9.1	47.7	55.5		9.8	39 11.0	59.3		9.5	47 4.8	54.9	
9.8	5.9	10.0		9.9	43.6	44.8		8.3	49.7	55.9		9.5	17.9	44.4		9.2	21.0	16.4	K
9.5	10.7	39.9		10	43.8	43.5		9.7	58.9	4.0		9.6	37.8	3.5		9.3	22.4	32.9	
9.8	13.4	35.4		9.4	47.2	15.5		9.9	32 11.0	2.8		9.6	40.9	56.8		9.4	35.5	41.5	
9.4	22.5	24.7		10	51.9	59.3		8.5	17.3	30.4		7.5	45.5	19.4	K	9.1	54.4	29.1	
9.3	31.1	37.7		9.5	24 3.6	48.7		9.7	18.3	14.9		9.5	51.9	42.2		9.2	48 8.8	53.3	
9.8	17 10.1	51.7		9.8	13.0	22.4		7.5	37.7	13.8	K	9.1	52.5	23.8	K	9.2	10.0	54.4	
10	15.7	5.0		8.7	38.7	56.0		9.8	44.8	46.8	K	8.7	40 29.9	50.8	K	9.7	12.3	25.6	
9.0	25.4	11.1		9.8	45.2	17.0		8.7	46.9	6.0		9.4	36.4	23.4		9.7	15.3	36.7	
8.7	26.8	8.0	K	9.4	48.1	19.1		9.8	49.5	21.9		9.3	44.5	4.0		9.2	28.8	48.4	
9.2	32.2	1.2	K	10	25 4.5	51.9		9.6	55.3	56.2		9.8	58.7	10.6		8.5	30.1	23.7	
8.2	42.6	55.5	K	9.3	7.6	18.1		9.8	55.4	28.3		9.0	41 1.1	48.7	K	9.5	31.1	9.7	
9.0	50.6	6.8		9.0	19.8	14.0		9.2	33 7.0	35.7		9.2	8.3	37.2		9.3	34.1	42.4	
9.9	54.0	59.5		9.0	24.8	10.3		9.5	8.4	5.6		6.0	9.2	50.2	K	9.8	45.7	51.0	
9.7	58.1	25.3		8.6	34.7	14.8		9.1	9.2	51.9	K	9.1	10.5	58.2		9.7	55.0	3.2	
9.5	18 25.9	10.0		9.1	35.3	34.7		10	15.1	1.4		9.5	19.5	33.9		9.9	49 2.3	51.1	
9.8	31.7	24.6		10	47.3	3.8		9.1	17.3	35.7		10	37.8	13.1		9.0	7.1	3.3	
8.7	34.0	1.1	Sj	9.0	47.9	8.1		9.0	21.3	31.2	K	9.8	38.9	0.2		8.9	15.2	33.6	Sj
9.5	43.1	12.5		10	26 5.2	57.4		9.4	22.0	31.7		8.3	42.4	51.4	K	9.1	33.9	19.1	
9.5	47.4	10.5		9.0	5.4	44.3	K	8.2	25.0	45.0	K	9.6	42 13.6	14.2		9.8	46.1	45.0	
9.5	56.7	24.6		10	13.8	10.7		10	32.4	50.5		9.6	27.8	20.5		9.7	51.5	47.6	
8.4	19 10.1	43.1	K	8.8	22.1	18.3	K	6.9	32.5	25.4	K	8.0	29.1	4.1	L	9.5	58.6	1.0	
9.7	11.9	39.3		10	35.7	45.6		10	34.2	43.5	—	10	46.2	57.1		9.5	50 10.1	50.0	
9.8	19.4	46.9		9.4	43.8	2.9		9.0	37.8	32.6		9.4	46.7	46.2		9.2	17.6	3.4	
8.5	23.4	47.2	K	8.9	46.0	58.3		9.8	55.0	5.3		9.0	58.7	33.8		9.0	24.0	35.8	K
9.2	51.4	17.9	K	9.4	55.5	53.4		9.0	34 16.2	11.6		9.8	43 14.2	45.2		9.4	34.0	15.0	
9.9	59.3	53.8		9.8	27 3.6	4.9		9.5	17.5	21.6		9.0	22.9	59.7		9.0	42.2	41.5	K
8.3	20 11.2	4.7	K	9.3	21.3	43.9		9.5	22.4	54.7		10	24.8	59.6		9.4	59.2	24.7	
8.9	15.8	25.9	K	9.0	35.8	14.5	K	10	23.8	58.6		9.0	25.6	12.8	K	9.2	51 1.1	30.2	Sj
8.3	17.6	55.7	L	9.8	40.9	45.4		9.1	32.5	55.8	—	9.8	38.7	28.0		8.5	6.7	28.0	Sj
9.8	29.5	29.5		8.9	44.9	56.7		8.9	48.4	1.5	K	10	48.2	5.0		9.8	7.5	42.9	
9.8	30.3	31.6		9.4	55.0	49.6		9.8	51.7	35.3		9.0	44 10.9	5.0		10	23.4	57.6	
8.3	31.6	12.4	K	9.5	58.7	23.1		9.4	56.3	46.3		10	42.8	54.0		10	41.0	52.2	
9.2	34.8	45.5		10	28 2.7	37.9		8.0	35 13.7	30.9	L	9.5	45 0.7	32.0		9.4	50.9	40.4	
9.3	49.4	4.0		9.5	12.2	13.5		8.8	22.8	0.7	K	9.0	4.6	38.2		8.5	52 7.8	7.6	Sj
9.5	55.0	30.7		9.3	20.0	53.8		9.8	29.5	57.0		9.6	5.8	27.0		8.8	17.2	24.8	K
9.8	57.2	22.4		9.7	20.5	50.1		9.6	40.4	1.9		9.0	17.2	28.6	K	9.0	23.2	42.4	K
8.7	21 3.1	26.2	K	9.5	39.0	57.4		9.7	41.1	18.4		9.5	19.7	37.7		9.7	28.3	48.3	
6.3	3.5	15.9	K	9.5	50.1	43.0		9.0	46.5	51.4	K	9.4	26.7	8.6		8.9	29.3	56.5	
9.1	3.9	43.6		9.0	58.6	8.3	K	9.5	57.9	27.8		9.3	27.9	59.8		9.4	53.4	10.4	
9.3	15.0	38.1		9.4	58.7	53.0		9.1	36 4.9	43.9		8.5	30.5	17.3		9.3	53 0.9	2.0	
9.6	37.3	18.5		10	29 21.4	4.8		9.9	14.3	5.0		9.5	32.7	25.3		10	17.8	43.3	
9.9	39.9	1.8		9.4	24.6	45.8		9.2	37.4	55.8	K	9.8	35.1	21.2		9.2	26.0	2.4	
9.8	45.7	59.0		8.9	27.8	51.4	K	9.7	39.3	42.6		8.9	44.7	33.1	K	9.0	29.2	11.0	
10	50.6	24.3		9.0	32.4	27.8	K	9.8	46.7	12.5		9.4	54.4	53.2		9.3	37.5	53.7	
10	54.9	22.5		10	39.7	12.5		9.5	51.2	14.1		9.8	46 1.5	17.3		9.3	59.8	3.2	
10	55.0	34.6		10	40.1	58.4		9.5	59.5	36.3		9.8	6.4	2.4		9.5	54 14.3	5.8	
9.1	57.1	52.3	K	9.0	30 4.6	13.7		9.5	37 6.9	0.7		9.8	10.2	8.4		8.8	29.9	50.2	

2201—2260				2261—2320				2321—2380				2381—2440				2441—2500			
	7h—8h		—11°		8h		—11°		8h		—11°		8h		—11°		8h		—11°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.7	54	31.6	44.2	9.0	2	43.1	34.2	9.2	13	52.7	58.7	9.4	25	48.8	40.7	9.2	37	4.2	57.0	
9.3		43.3	33.3	8.5		43.8	0.5	K	9.4	14	0.7	57.3	9.0	26	4.5	2.6	9.5		4.5	39.4	
9.0		45.0	20.0	9.2		54.5	5.3		9.5		2.4	11.6	9.8		26.2	7.4	9.3		21.8	30.0	
9.4		47.5	49.3	8.9	3	9.8	48.9	K	9.5		12.6	57.0	9.3		31.5	15.4	8.8		23.2	55.2	
9.5		52.1	23.9	9.4		37.3	2.5		9.8		15.8	48.5	9.2		51.1	54.2	9.9		57.2	57.0	
9.6	55	14.9	0.6	9.0		41.1	7.4	K	9.5		38.8	19.9	9.8		55.7	27.9	9.8	38	4.2	56.8	
8.5		25.0	53.5	9.0	4	10.2	29.8		9.4		54.3	23.0	10		56.4	31.0	9.5		4.6	51.9	
8.7		41.2	34.6	8.3		16.4	20.4	L	9.2		57.9	47.8	8.5	27	1.7	43.0	K	10		9.5	16.5	
8.5		46.0	57.6	9.5		21.3	21.3		9.3	15	11.4	2.6	K	9.5		12.5	15.5		9.5		18.1	12.7	
9.5		46.8	46.9	9.3		30.4	44.7		9.1		40.0	47.6	K	8.2		22.6	51.2	K	9.8		51.6	3.7	
9.4	56	24.3	27.4	10		32.5	15.0		9.1		51.0	37.0		9.4		31.4	38.0		9.5	39	5.6	53.3	
9.1		31.6	13.5	9.3		39.0	46.6		8.4	16	0.3	55.7	K	9.8		43.2	5.1		8.8		6.2	0.0	Sj
9.6		34.6	15.0	8.5		46.7	55.3		8.7		6.7	2.4	K	9.4		45.5	37.2		9.5		33.7	52.8	
10		39.7	35.5	9.1		56.4	18.6		10		11.6	44.9		9.8		56.0	10.0		9.5		40.2	0.5	
9.5		42.1	46.3	8.4	5	1.8	2.5	L	8.7		12.5	35.7		9.5		56.6	29.5		9.6		53.5	49.2	
9.3		46.6	14.8	9.0		14.7	26.4		9.5		15.2	26.1		9.1		56.6	21.6		10	40	3.6	35.8	
9.0		48.4	40.0	9.8		35.6	29.7		9.3		21.7	57.2	K	10		57.5	0.9		9.7		11.2	59.5	
9.3		52.0	53.8	9.2		58.4	53.5		9.1		26.8	12.5		8.8	28	11.0	13.0	K	9.1		17.2	1.2	
9.5	57	13.5	49.4	9.4		59.1	50.6		9.0		41.1	54.6	K	8.7		15.6	33.6	K	8.7		26.3	43.0	
9.7		22.4	2.7	9.4	6	34.5	50.3		9.8		54.2	16.6		9.4		41.7	58.5		9.5		38.6	57.3	
9.4		22.5	18.9	9.5		45.7	7.5		9.6	17	5.3	55.3		9.8		58.2	25.2		10		40.4	44.8	
9.0		22.6	26.9	9.1	7	10.3	28.1		9.6		9.4	0.5		9.2	29	6.1	52.4		9.7		49.9	49.6	
9.3		25.5	19.3	8.6		12.9	19.6	K	9.7		31.6	2.2		8.5		7.3	6.5	K	9.5	41	0.0	44.0	
9.1		34.2	7.5	8.4		40.8	5.6	Sj	8.9		40.0	2.7	K	9.8		14.2	53.4		9.4		2.1	14.0	
9.4		45.6	42.4	9.5		50.6	33.0		7.5		46.2	3.1	K	9.6		22.5	40.1		9.5		3.4	53.5	
8.5		53.7	37.1	K	9.6		58.0	3.5		9.5		54.9	36.5		9.7		24.7	53.9		9.8	42	4.3	22.9	
10	58	36.9	40.1		9.5	8	4.2	9.4	9.1	18	2.7	51.7		8.8		25.4	55.8	K	9.3		25.4	58.5	
9.8		37.6	13.7		9.4		5.4	13.7	9.5		26.3	50.6		9.8		57.3	23.7		8.2		48.1	55.2	K
9.2		41.0	4.7	K	9.0		18.7	30.0	K	9.8		26.6	25.3		9.3	30	38.5	13.7		9.0		59.3	33.0	
9.6		45.8	48.4		9.8		27.0	0.1		10		26.9	2.5		9.3		45.7	58.9		9.4	43	3.2	38.5	
10		49.7	53.1		9.3		37.8	2.4		9.5		38.7	25.3		7.0	31	6.5	14.6	L	9.6		3.9	39.4	
10		51.5	57.5		8.8		45.7	58.6	K	8.3		48.6	57.5	K	9.4		43.4	11.4		10		44.3	43.6	
9.3		56.3	47.7		8.9		50.8	48.2	K	9.5		58.0	57.4		8.8		52.6	7.1	K	9.1		46.9	47.8	K
8.9	59	8.1	44.7		9.8		57.8	3.7		9.8	19	4.4	2.6		9.6		59.6	29.4		9.8		55.2	26.2	
10		25.0	49.9		9.8	9	18.3	30.8		8.3		12.1	30.6	K	8.2	32	7.4	36.5	K	9.7		56.1	40.9	
8.5		26.4	25.2	K	9.3		24.2	19.4	K	9.8		16.9	3.7		9.1		8.7	59.8		9.3	44	18.8	46.4	
8.8		37.7	9.9	K	8.5		28.2	7.3	K	9.7		18.5	40.5		9.5		12.6	45.5		9.3		20.9	58.4	
9.5		49.3	47.4		9.8		30.4	22.2		8.0		46.8	17.9	K	9.5		34.9	33.8		9.8		23.2	43.4	
9.0		59.9	53.5	K	9.1		32.9	22.8		9.3		54.7	57.8		9.2	33	1.9	20.9		9.1		41.8	41.3	
9.5	0	26.3	29.2		9.1		36.2	19.0		9.3		55.7	56.9		5.7		9.4	57.9	K	9.0		45.7	22.8	
9.2		27.9	1.8		9.4		38.9	24.1		8.3		58.3	46.7	K	9.8		14.0	19.0		9.1		59.1	56.5	
9.5		31.0	20.8		9.8		59.8	39.3		9.2	20	11.8	22.5		9.5		20.2	2.6		9.2	45	34.3	24.2	
8.8		34.9	25.5	Sj	9.8	10	3.2	51.3		9.8		52.1	26.4		9.5		31.3	53.0		8.0		56.1	10.2	L
9.1		42.4	47.7		9.3		8.5	12.2		9.2	21	4.3	59.0		9.5		47.6	24.4		9.8	46	7.6	31.9	
8.3		46.7	14.7	K	8.5		30.9	19.2	K	9.7		28.9	48.9		7.8		47.9	39.7	K	9.8		16.7	8.7	
9.3		51.3	56.9		9.8		41.3	39.9		9.5		37.6	23.7		7.8		49.2	24.4	L	9.5		30.0	53.5	
9.6	1	8.6	48.8		9.1		51.9	55.0	K	9.3	22	27.3	33.0		9.2	34	31.1	51.3		9.9		33.6	8.2	
9.4		12.0	37.7		9.5	11	19.8	24.4		9.0		28.5	36.5	K	9.6		54.2	2.8		9.1	47	7.3	23.0	
9.8		12.6	35.4		9.0		30.1	37.1	Sj	9.2	23	7.3	48.8		9.1	35	3.8	59.1		9.8		29.9	39.8	
9.0		29.5	12.3	K	9.3		48.6	34.8	Sj	9.0		36.2	21.6	K	9.6		4.6	59.8		9.3		46.1	59.7	
9.5		33.5	16.0		9.4		56.2	42.0		9.2		45.7	40.3		9.5		9.6	37.1		10		59.9	47.3	
10		37.0	41.2		8.8	12	16.5	5.8	K	7.7		52.8	19.0	K	6.8		15.4	27.1	K	9.2	48	2.2	40.7	
9.4	2	1.9	13.2		8.5		20.0	4.2	K	9.3	24	6.8	57.7		9.8		25.2	35.8		8.9		19.9	4.0	
9.5		18.4	6.8		8.8		24.0	11.7	K	9.9		21.5	49.8		9.8		47.0	22.4		9.1		22.0	32.3	K
8.5		20.6	9.5	K	8.0		37.3	26.2	K	9.5		28.5	41.7		9.9		47.8	44.9		9.1		30.2	39.1	K
9.1		29.4	46.8	K	9.0		39.8	41.1		9.2		35.3	59.6	Sj	9.6		59.5	46.5		9.8		45.7	12.6	
9.0		30.1	20.7	K	8.5		48.6	9.2	K	9.6		41.4	41.0		7.8	36	14.7	54.0	K	9.5		47.3	53.0	
9.3		33.9	39.3		9.1	13	26.5	40.6		9.5	25	5.4	55.6		9.4		31.6	52.2		9.0		58.3	20.2	
9.5		38.8	58.9		9.5		36.7	27.5		9.5		25.5	1.4		9.4		42.6	50.8		9.3	49	21.5	39.4	
9.5		42.7	11.4		9.8		46.0	10.0		9.1		28.3	44.9	K	9.5	37	2.3	2.0		9.1		22.5	12.7	

2501—2560				2561—2620				2621—2680				2681—2740				2741—2800			
8h—9h		—11°		9h		—11°		9h		—11°		9h		—11°		9h		—11°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
10	49	49.6	26.2	9.2	1	28.9	49.0	8.5	15	54.5	5.6 K	8.6	30	13.4	34.2 K	9.3	43	56.1	36.6 K
9.9		59.6	28.7	9.8		43.3	12.4	9.8	16	5.9	39.5	9.5		53.7	22.2	9.2	44	11.0	32.9
8.9	50	2.9	51.9	9.3		48.6	40.0	8.9		32.8	4.4	9.5		57.7	47.5	9.8		15.4	29.0
9.8		26.4	18.0	9.6	2	6.0	43.0	9.1		55.1	10.9	9.5	31	1.3	30.2	9.3		17.8	16.8
9.8		30.6	30.7	6.1		13.8	46.4 K	9.9	17	9.9	38.8	9.3		6.8	51.9	10		41.4	45.7
9.8		47.4	4.5	9.5		24.6	21.5	9.7		30.8	19.2 B	8.6		36.1	59.4	9.1		43.9	28.5
9.8		48.5	44.0	9.3	3	2.5	54.4	9.3		32.1	29.0 K	7.8		38.6	8.5 Sj	9.8		49.6	3.5
9.6		49.5	47.6	9.5		9.4	47.3	9.1	18	1.6	27.5 K	9.5	32	18.0	7.6	9.5		54.4	59.2
9.0		58.7	49.4	9.6		11.6	50.3	9.3		12.2	51.4	9.5		19.8	18.8	10	45	13.2	16.9
9.3	51	41.1	22.9	8.5		21.6	1.8 K	9.6		41.0	50.8	10		19.9	1.0	10		45.9	48.9
9.6		44.1	7.9	9.6		23.8	38.9	9.3		44.1	8.7	9.8		24.3	35.5	9.1		57.9	31.7
9.7		54.2	4.6	9.6	4	13.9	24.3	9.3		47.9	36.5 M	9.4		27.8	46.6 M	8.5	46	9.3	55.0 Sj
9.4	52	9.5	9.7	9.6		32.7	51.7	9.4	19	6.4	2.5 B	9.8		28.9	48.9	9.5		27.6	30.0
9.5		13.1	56.3	9.3		42.6	34.4	9.8		11.7	23.7	9.5		46.0	3.4	9.2		27.6	24.5
9.6		41.0	9.0	8.6		52.1	35.2 K	8.5		19.9	54.8 M	9.4	33	32.0	7.9	9.0		49.2	57.5
10		44.2	47.6	9.8		56.9	41.6	9.0		21.2	51.8 M	9.5		45.1	50.0	9.1	47	32.8	22.5
9.5		44.6	26.0	8.4	5	3.7	14.5 K	9.5		27.3	17.0	9.5		45.1	41.3	9.0		40.3	21.4
9.9		49.6	46.8	9.1		33.6	4.8 K	9.5		27.9	22.9	8.8		45.3	16.8 K	7.5		58.4	47.0 K
9.5	53	1.8	14.1	9.9		36.8	52.2	9.8		43.1	26.5	9.0		47.4	39.1	9.8	48	21.1	10.7
8.0		10.4	53.9 K	9.1	6	15.3	57.7 K	9.8		55.4	52.0	9.5	34	9.3	48.5	9.5		38.2	22.9
7.8		24.4	40.7 L	10		25.5	39.7	9.8	20	7.9	4.0	9.2		20.3	39.1 Sj	9.1	49	11.7	46.1
9.8		26.1	6.4	9.6		28.6	18.0	9.8		31.7	51.4	7.7		43.5	57.5 K	9.3		32.6	7.3
7.3		36.8	34.4 L	8.7		41.1	47.2	8.6		45.0	31.1 K	9.8		53.1	50.3	9.1		42.5	35.0
9.2		42.6	45.0	9.8	7	9.7	49.0	9.3		52.0	45.0	9.5	35	14.2	57.2	9.4		46.4	41.0
9.8	54	0.7	38.8	9.3		12.4	53.0	9.4	21	26.5	29.6	9.4		25.0	57.0	8.4		50.2	59.6 L
9.0		14.8	54.8	9.5		45.7	43.9	9.2	22	9.5	6.2	9.6		31.1	41.0	9.4	50	21.8	41.4
9.7		19.8	59.2	9.8		45.9	5.3	9.1		29.3	51.3 M	10	36	33.1	52.5	9.1		29.0	52.4
8.5		34.0	8.4 K	9.3		57.7	31.6	8.8		33.9	46.3	9.8		36.7	32.5	10	51	7.2	50.3
9.2		44.5	52.9	9.8	8	16.9	48.8	9.8	23	36.5	53.1	9.8		43.6	43.2	9.4		12.8	33.8
9.4		56.3	56.0	9.1		38.6	14.9	9.3	24	23.0	49.4	9.7		57.1	52.5	9.4		27.5	7.5
9.8	55	2.8	39.4	8.5		51.6	2.1	9.5		26.8	35.0	9.5	37	6.6	20.2	10	52	14.5	1.0
9.5		6.4	59.6	9.0		58.1	37.8	7.0		28.5	25.9 K	8.3		12.0	12.9 K	9.8		16.6	34.4
9.8		20.3	13.4	9.7	9	2.9	42.1	9.6		29.3	59.6	8.0		41.2	0.2 K	9.5	53	8.4	27.1
9.3		27.1	32.6	8.6		28.3	19.5	9.4		30.5	37.5	9.3	38	17.0	43.7	9.5		31.7	0.3
9.1		35.1	56.9	9.4		43.2	9.0	9.5		55.4	53.0	8.8		26.3	48.5 K	9.0		33.2	27.3
9.4	56	32.0	6.4	9.7		43.9	1.2	8.7	25	9.7	39.4 K	9.8	39	2.9	33.8	9.4	54	30.5	59.2
8.3		39.2	59.0 K	9.8	10	9.1	11.9	9.8		15.0	44.7	8.5		43.0	14.2 K	9.5		46.2	48.2
9.5		40.8	41.0	9.1		15.3	55.8	9.0		57.2	59.6	7.8		44.2	16.2 K	9.5	55	8.4	7.8
9.0		41.1	20.9 K	9.8		16.7	11.9	8.5		57.7	56.9	9.1		48.6	42.9	9.5		24.6	14.3
9.4	57	5.4	44.1	9.1		18.1	24.2 K	9.5		59.4	31.2	9.8		58.2	43.2	9.6		31.5	4.8
9.9		8.4	31.8	7.7		30.9	21.4 K	10	26	10.2	49.2	8.5	40	35.5	23.8 K	9.0		34.4	36.7
9.8		51.2	42.7	9.0		51.2	10.0	9.5	27	2.2	15.7	8.3		46.4	54.7 L	9.5	56	9.8	2.8
8.2	58	0.9	7.2 L	10	11	3.6	30.0	9.4		7.6	44.1	9.5		50.9	14.7	9.4		10.9	44.5
9.2		11.8	5.8	8.7		7.6	42.9 K	9.0		7.7	2.3 K	8.7		58.5	53.3 L	9.8		36.6	51.8
9.3		32.1	10.2	10		26.4	46.4	9.3		14.6	9.8	9.0	41	15.4	19.1 K	9.7		39.1	2.4
9.5		45.9	27.3	9.5		41.9	37.5	9.6		19.3	20.9	9.8		53.9	8.6	9.7	57	29.5	43.8
8.9	59	2.8	9.7 K	9.5		53.1	56.0	9.0		19.5	35.1	9.4	42	2.8	0.2	7.8		33.1	1.5 K
9.1		40.2	16.0 K	10	12	44.7	8.3	8.5		45.1	57.7 K	9.5		10.3	57.6	8.5		59.0	16.1 K
9.8		53.9	40.2	5.5		47.8	21.9 K	9.5		46.1	57.8	9.8		16.4	54.1	8.3	58	3.1	28.4 K
10	0	13.7	55.4	9.3	13	20.3	24.2	6.3		50.4	28.9 K	9.3		26.0	3.0	9.3		7.4	5.4
9.9		21.3	3.7	9.0		54.4	57.5	9.8		57.7	9.3	6.3		29.5	6.6 K	9.1		16.1	0.4
9.1		39.9	47.3	9.5		57.8	42.3	9.5		59.5	26.9	8.5		39.3	36.4	9.5		18.6	23.4
9.4		40.5	38.4	9.8	14	6.2	39.3	9.4	28	9.8	33.9	9.4		43.4	22.0	9.7		30.7	53.5
7.5		47.0	26.4 K	9.0		31.8	13.5	7.8		42.7	18.1 Sj	9.7		46.5	38.8	8.5		32.8	48.7
9.4		47.1	56.7	9.8		32.5	43.7	9.2		48.9	2.0	9.5		55.4	32.1	9.1		41.5	58.8
9.4		47.9	58.2	9.5	15	7.6	12.1	10		52.9	44.2	8.3	43	15.3	36.1 K	8.7		45.0	19.0 Sj
8.6		57.1	44.5	9.8		8.4	29.5	9.5	29	9.4	49.0 M	10		35.6	37.0	9.4		48.1	47.8
9.6		57.2	26.4	9.5		11.1	50.8	9.5		49.4	5.0	9.0		39.1	37.7 K	10	59	4.2	51.6
8.0	1	20.0	21.3 K	9.6		14.0	12.5	10		53.1	57.1	9.5		42.5	26.5	9.8		5.4	28.3
8.4		22.0	26.0 K	10		30.5	50.7	9.6	30	13.0	45.3	8.0		49.7	3.4 L	9.4		7.6	25.7

2736: 15:68 36′7″.4 B_3, Ep. 1872.92 2741: 56:28 36′2″.5 B_3, Ep. 1870.24

2801—2860				2861—2920				2921—2980				2981—3040				3041—3100			
9h—10h		−11°		10h		−11°		10h		−11°		10h—11h		−11°		11h		−11°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.6	59 8.5	43.0		9.8	13 29.2	49.0		7.2	30 16.5	38.7	K	8.5	50 22.6	23.0	Sj	9.8	2 34.7	9.7	
9.8	14.0	23.2		9.8	37.8	39.8		9.1	41.4	16.2		9.1	26.1	42.4		9.6	39.1	41.9	
8.1	35.2	46.2	K	9.2	56.2	55.5		10	42.8	47.8		8.5	57.3	37.2	K	9.6	54.0	31.7	
9.1	45.5	24.8		9.7	14 21.7	0.1		9.8	46.9	51.0		9.4	57.8	17.0		9.5	3 1.2	46.0	
9.4	49.0	18.4		9.7	43.1	44.1		6.5	31 40.2	41.2	K	9.1	52 7.6	42.1		9.8	10.5	32.1	
9.5	0 14.0	49.0		9.4	15 13.8	22.3		9.4	52.6	8.4		9.2	12.4	58.6		9.0	4 50.4	37.2	
9.7	1 1.5	43.5		9.0	17.2	42.2		9.8	58.2	16.2		9.2	17.0	53.1		9.5	5 20.8	2.2	
9.8	3.0	41.9		9.5	21.9	0.2		9.3	33 7.8	0.4		9.4	32.8	37.1		9.6	29.4	17.5	
9.5	17.6	44.8		9.8	38.0	9.5		8.5	45.8	26.7	B	9.7	33.3	45.9		9.8	35.2	12.9	
9.5	17.9	35.7		9.3	16 17.8	8.8		9.8	47.1	13.0		9.5	54.2	1.9		9.5	37.3	8.9	
8.2	30.6	48.7	Sj	7.6	28.6	45.5	K	9.5	34 32.8	28.6		8.3	53 1.5	22.0	Sj	7.2	40.7	59.7	M
8.8	44.4	54.6		9.5	29.5	26.9		9.9	35 18.0	9.1		9.5	2.4	54.1		10	47.6	45.9	
9.5	49.7	36.3		9.8	48.6	13.5		9.8	36 23.0	30.2		8.0	3.2	0.3	K	9.5	55.0	31.4	
9.3	2 14.5	23.6		9.1	17 58.3	35.6		9.8	35.7	59.7		7.7	27.8	51.6	K	10	6 24.8	44.9	
9.6	27.5	25.8		9.5	18 18.8	26.2		9.2	45.6	13.1		8.0	36.0	18.0	L	9.8	51.1	48.3	
7.5	31.8	10.9	K	9.2	33.0	56.8		9.5	37 47.6	24.8		7.5	37.6	46.5	K	9.6	7 2.2	10.8	
10	40.3	31.0		9.0	41.0	16.7	M	9.0	38 17.1	5.5	M	9.8	45.8	57.5		10	36.1	58.9	
6.8	49.9	23.0	L	9.1	51.7	33.6		9.4	43.9	44.7		9.8	54.3	49.7		9.4	42.9	32.3	
9.5	3 13.4	23.4		9.5	19 10.0	53.8		9.8	39 36.5	53.9		8.5	54 7.8	7.4	M	10	45.1	48.9	
3.5	30.7	38.3	K	8.3	14.6	20.2	L	9.4	37.3	0.8		9.4	8.2	12.8		8.7	47.0	30.2	K
9.9	36.4	56.0		8.4	56.8	36.3	K	8.5	54.0	14.9	K	8.0	8.8	17.1	L	9.3	57.1	9.5	
9.5	4 30.9	55.7		10	20 5.2	44.0		9.5	40 3.6	48.7		8.0	12.5	58.4	K	8.3	8 17.3	28.7	L
9.1	40.8	35.4		9.5	9.1	6.4		9.9	5.1	7.2		9.3	50.3	37.3		6.5	22.8	47.9	L
9.8	5 0.3	20.4		9.1	21 53.0	59.6		9.0	14.9	8.2		8.4	54.5	4.0	K	9.7	30.4	27.8	
8.3	38.9	18.9	K	8.5	54.2	31.9	K	9.5	38.4	5.6		9.5	55 1.5	18.7		10	39.1	55.1	
9.5	6 28.1	40.0		7.8	59.3	41.6	K	9.3	39.2	15.1	M	8.8	19.2	36.2		9.1	50.0	45.7	
9.3	43.4	4.7		9.3	22 6.7	34.9		9.7	44.8	47.5		9.6	52.7	18.5		9.6	9 14.0	23.9	
9.0	57.4	4.2	K	9.5	23 2.4	55.3		8.9	45.1	52.7		9.8	55.4	24.9		8.5	29.7	52.7	L
8.0	7 14.3	52.4	K	8.3	10.1	23.9	K	8.1	56.5	24.0	K	9.8	56 11.7	47.1		9.8	10 15.3	28.5	
9.8	24.8	30.4		9.5	20.0	18.9		8.6	58.8	21.9	K	9.7	22.9	17.1		9.6	20.0	10.2	
9.2	29.3	1.2		9.4	45.0	49.6		9.8	41 13.6	50.5		9.2	27.5	48.6		9.5	47.0	18.6	
8.8	44.9	23.2		9.8	50.6	25.4		9.6	26.8	0.4		9.0	27.7	48.3		8.8	11 23.5	39.6	K
7.3	49.3	18.1	L	8.0	55.0	0.8	L	9.8	45.3	20.8		9.6	53.4	28.8		9.7	59.5	37.9	
9.0	58.0	56.3		9.1	24 4.4	10.0		9.0	49.2	14.4		8.9	53.8	4.0	K	9.3	12 6.6	21.7	
7.5	8 5.0	4.4	L	9.1	16.9	56.9		10	55.0	50.9		9.0	57 1.7	55.0		9.9	12.9	59.8	
9.4	42.6	43.2		9.7	19.7	4.6		10	42 18.1	8.0		10	58 1.5	26.4		9.9	35.2	35.8	
9.8	54.4	29.5		9.2	29.4	15.8		8.2	19.2	11.6	Sj	9.8	10.7	44.3		9.4	59.3	29.4	
8.3	9 40.6	0.4	K	8.3	52.2	27.3	K	9.6	22.2	41.1		9.0	17.3	22.9	K	8.5	13 15.1	52.9	K
9.6	50.1	7.8		10	25 14.8	7.2		9.0	43 14.9	36.8		9.8	20.5	36.7		8.7	36.8	22.7	M
9.4	10 1.2	11.9		10	15.7	1.0		9.6	19.0	48.0		9.1	21.6	50.2		9.8	56.7	32.9	
8.5	5.8	24.2	K	9.7	17.2	18.4		9.3	23.5	6.3		10	23.1	23.4		7.7	14 14.5	54.3	Sj
9.8	15.7	14.3		9.1	19.9	56.9		8.7	24.3	10.0	K	8.6	43.8	22.8	K	9.9	15 0.4	18.1	
7.8	36.8	21.1	K	9.5	41.4	47.0		10	53.2	23.2		10	59 6.0	1.6		8.9	13.5	51.4	K
9.3	54.2	56.9		8.7	26 1.8	2.7	K	9.5	44 3.4	38.8		9.4	24.0	17.3		9.3	38.4	59.3	
10	11 3.5	31.5		9.4	5.7	5.1		9.4	6.1	20.2	M	9.5	32.6	50.9		7.9	16 5.2	18.3	K
9.4	4.4	53.6		8.5	12.3	43.3	M	9.6	28.2	37.9		9.2	35.3	4.0	M	9.8	11.6	3.1	
9.7	8.0	51.1		9.8	30.1	36.5		9.9	45 24.0	8.2		8.6	46.9	9.7	K	9.4	40.0	13.8	
9.5	25.3	20.3		9.8	36.4	57.0		9.1	46 18.2	51.1		10	0 4.5	3.8		9.8	17 3.2	35.8	
8.5	59.9	33.0		9.8	44.5	46.2		9.1	44.0	4.2		9.2	15.3	2.7	M	9.8	34.0	46.2	
9.7	12 4.5	46.9		9.7	54.3	3.8		6.8	44.8	39.8	K	8.2	24.3	48.0	K	8.3	44.5	45.3	Sj
6.5	9.8	48.1	K	8.6	27 8.7	6.8		9.5	47 6.4	21.2		9.4	25.7	52.4		8.4	59.4	10.1	K
10	29.9	30.5		9.0	38.9	28.3		9.8	14.8	48.7		10	45.8	19.5		8.2	18 6.7	22.4	K
9.4	38.3	29.0		9.0	46.6	2.1		9.0	52.7	26.2		10	57.4	15.2		9.8	23.3	57.9	
9.8	51.5	1.3		9.0	28 11.3	59.7		7.5	48 1.1	21.1	Sj	9.7	58.9	52.6		9.1	27.5	44.5	
9.5	59.4	58.7		9.5	29.1	48.7		9.5	8.0	8.2		9.0	1 8.6	39.9		9.8	55.1	45.0	
9.6	13 2.2	4.8		7.8	50.2	9.6	K	9.8	27.2	19.3		9.6	15.6	1.3		9.4	57.2	52.1	
9.0	4.7	28.3	K	9.4	29 12.0	37.9	K	9.9	49 1.4	52.6		8.7	16.2	12.9	M	9.1	19 43.8	17.2	
8.9	16.3	25.0	K	5.7	19.4	27.4	B	9.5	10.1	16.8		10	57.0	32.2		6.0	51.6	33.4	K
9.5	17.0	40.7		9.1	55.4	33.3		9.6	15.0	3.1		9.6	2 3.5	36.0		9.0	20 3.2	40.3	L
8.9	20.5	27.8	K	9.4	30 0.6	52.4		9.4	50 9.3	36.3		9.4	9.1	16.4		7.7	12.5	38.3	Sj

2918: 19:60 27′22″0 B_4, Ep. 1872.18

3101—3160					3161—3220					3221—3280					3281—3340					3341—3400				
	11h		—11°			11h		—11°			11h—12h		—11°			12h		—11°			12h		—11°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.7	20	14.0	33.5		9.8	35	41.7	28.5		9.4	53	23.6	55.5		9.0	12	44.3	12.3	M	8.9	32	40.7	51.6	
9.3		40.4	47.8		9.8		44.2	4.4		9.8	54	4.3	21.0		9.5	13	3.1	32.0		9.0		41.6	2.6	K
9.8		44.1	28.3		9.0		52.6	58.7	K	9.2		30.4	4.7	K	9.2		10.3	15.5		9.0		49.0	38.0	
9.5	21	7.8	58.7		9.1	36	7.5	45.5	K	8.8		54.2	26.6		9.8		11.6	32.9		9.7		52.2	1.2	
8.7		21.7	30.6	K	9.6		21.0	24.1		8.0	55	1.4	7.1	K	9.4		14.8	18.8		9.5	33	0.3	29.1	
9.5		28.8	58.7		9.1		23.0	23.6		8.3		4.9	9.9	K	8.5		54.5	58.8	K	9.3		4.6	52.5	
9.5		36.2	16.4		9.7		28.6	37.0		9.3		20.6	39.2		9.8	14	1.5	41.3		9.4	34	2.4	31.0	
9.4		45.7	19.8		9.4		35.3	17.2	M	8.6		31.1	0.1	K	9.8		10.7	50.3		9.5		51.5	54.9	
9.8	22	57.0	31.6		9.8	37	2.9	13.3		10		50.2	23.3		9.6	15	34.5	38.5		9.5	35	3.1	56.5	
9.1	23	4.7	15.8		9.9		5.1	55.6		9.9		57.9	9.0		9.5		44.0	38.1		9.2		38.0	13.2	M
9.1		16.8	56.2		9.3		15.5	1.7		9.9	56	25.3	12.1		6.8		50.5	0.5	K	8.5	36	4.6	47.5	M
9.8	24	3.3	41.2		9.5		44.2	3.2		9.1		54.0	59.3	M	9.8	16	26.7	15.9		9.5		11.9	17.0	
9.5		15.1	25.6		9.4		58.4	49.6		9.8	57	12.7	18.0		9.3		44.1	23.5		6.5		14.8	13.3	K
9.2		22.2	35.0	M	9.8	38	26.1	29.9		9.8		43.5	27.5		8.8	17	3.6	28.6	K	8.9		20.1	15.3	K
9.4		35.7	18.9		9.4		32.0	57.2		9.1		44.0	16.4		9.1		7.9	22.7	M	9.3		20.5	19.0	
7.4		56.5	35.4	K	8.0		52.8	13.1	K	9.5	58	36.4	31.5		9.8		38.0	58.6		9.5		37.0	33.1	
9.5		59.5	13.3		9.7	39	40.4	43.9		9.8	59	4.9	1.2		9.8		54.1	21.7		9.2		37.2	8.8	
9.6	25	1.2	35.0		8.8		43.6	1.1	K	6.3		22.6	26.0	K	10	18	27.8	1.5		9.3		51.1	51.5	
9.4		7.9	51.2		9.8		45.8	15.7		9.3		26.5	42.0		8.8		29.1	5.3	K	8.3	38	14.3	25.6	K
9.4		12.6	37.8		8.9		47.5	38.0	K	9.4		56.5	37.1		9.6		38.0	43.4		9.5		31.7	4.3	
8.8		29.0	46.0	K	9.8	40	16.5	35.4		9.8		58.9	59.2		9.3		41.6	30.8		7.0	39	0.5	1.2	Sj
9.5		30.5	32.6		9.8		42.7	19.3		9.4	0	28.0	52.6		9.8		50.7	22.0		9.8		15.2	16.9	
8.2		31.5	13.7	K	8.7	41	8.6	39.1	K	9.6		42.2	20.1		9.3		56.4	50.8		9.6		18.2	19.1	
9.7	26	41.7	1.6		8.2		42.7	48.6	K	9.6		45.9	20.1		9.8	19	14.0	26.9		9.6		19.4	57.1	
10		55.4	37.1		9.8	42	6.0	56.9		9.9	1	28.0	48.8		9.4		31.7	20.0		7.8		44.2	29.2	K
9.5	27	15.5	23.3		8.8	43	13.9	53.9	K	7.0	2	0.0	2.3	K	9.8	20	13.7	3.7		7.5	40	10.7	46.9	K
9.7		16.8	16.4		9.8		16.6	47.8		8.8		0.5	25.7		8.9		41.6	45.8		9.9		26.6	41.5	
8.9		23.6	11.9	K	9.6		34.0	8.7		9.0		3.6	2.3	K	8.4	21	8.2	14.0	M	9.9		33.5	56.6	
7.3		35.1	17.2	B	9.8		58.0	42.6		9.8		14.4	56.6		9.5		15.5	47.5		8.3		53.2	44.5	K
9.7		57.1	43.2		6.3	44	0.0	23.1		9.1		51.8	41.6		9.3		34.4	52.2		9.3	41	14.8	48.8	
9.9	28	3.0	58.1		9.8		6.9	29.4		7.9	3	48.3	17.1	K	8.3	22	29.0	15.7	K	9.1		27.1	2.6	
7.5		13.4	36.0	K	9.5		43.3	38.7		9.7		53.1	11.8		9.6		38.2	39.7		9.4		29.2	14.4	
9.6		55.3	32.7		9.5	45	17.6	52.3		9.5	4	13.2	4.6		9.4	23	33.5	39.0		8.9		34.7	22.3	K
9.4	29	15.1	3.4		9.8		18.5	47.9		8.8		31.8	1.4	K	8.2		53.8	40.9	K	8.9		49.1	8.9	K
9.0		20.8	34.1	L	9.3		35.4	20.0		10		37.1	4.6		9.3	24	17.8	44.8	M	8.7	42	39.0	47.8	K
9.0		28.3	32.7	K	9.2		53.7	39.6		7.8	5	29.7	58.6	K	9.8		20.7	40.1		9.5		39.8	4.4	
9.5		53.5	55.7		9.4		56.5	48.4		9.0		53.8	41.3		8.1		22.3	52.5	K	9.4	43	28.1	33.3	
7.5		59.3	32.2	K	9.3	46	5.1	16.4		10		55.1	36.4		9.4		41.3	33.5		8.3		46.9	3.2	M
9.4	30	2.5	13.7		9.5		6.9	33.6		9.9	6	14.6	15.0		9.5	25	7.6	23.7		9.0	44	20.0	13.1	M
9.6		5.7	15.9		8.4		21.4	45.1	K	9.6		42.8	53.5		8.8		13.5	58.9	K	9.1		52.2	38.9	
9.8		39.2	10.8		9.9	47	14.8	56.0		9.6		48.8	33.8		9.1		22.3	18.0		9.6		53.9	48.0	
9.2		59.4	26.2		8.2		25.6	56.5	K	8.5	7	16.6	49.9	K	9.0		35.8	13.1		9.9	45	1.8	49.7	
9.5	31	23.6	49.0		9.3		34.8	36.1		9.0		27.8	49.0	M	9.8		41.4	45.7		9.5		5.0	9.4	
9.0		34.0	20.1		9.3		51.2	57.8		9.1	8	2.7	57.3		8.9		49.4	50.6		8.5		37.5	8.3	Sj
9.2	32	8.9	22.4	M	8.9		52.3	31.2	K	8.8		8.6	39.3	K	8.7	26	2.0	51.8	M	9.6		37.6	54.5	
9.8		22.7	31.3		9.3	48	34.1	46.0		9.8		13.8	24.6		9.4		58.4	2.4	M	9.4	46	45.3	54.6	
9.0		32.8	21.9	K	8.6		54.8	27.7	K	10		21.9	17.9		9.3	27	40.5	28.4		9.4	47	3.3	6.2	
9.8		38.3	27.5		9.6	49	14.5	38.6		8.5		46.0	13.2	L	6.3	28	2.5	13.0	Sj	9.6		8.8	57.9	
9.8	33	0.5	7.0		9.0		15.7	34.3	K	9.0	9	11.2	32.6		9.8		13.7	25.5		9.5		24.3	54.5	
9.1		5.5	49.6		9.2		24.0	16.2		9.6		27.7	0.6		8.7		14.3	13.5	K	9.1	48	8.2	15.6	K
9.9		5.6	17.0		7.2		32.4	18.0	K	9.5		34.2	39.0		8.8		14.6	13.1	Sj	9.4		17.5	16.1	
9.7		9.6	42.9		9.8	50	24.2	31.9		8.7		52.3	28.2	K	9.3		19.3	10.7		9.8		21.9	9.6	
9.5		19.7	28.9		9.8		50.6	12.4		9.6		57.9	16.6		6.5		22.5	16.1	Sj	9.6		33.5	8.3	
9.1		22.8	26.2		9.2	51	2.9	19.1		9.4	10	7.7	37.6		8.7		31.5	27.7	L	9.3		34.0	12.0	M
9.1		35.7	23.8	K	9.1		19.0	14.2		9.4		14.8	28.0		8.5		54.0	44.8	L	7.3	49	8.8	9.3	K
9.6	34	50.1	58.3		9.8		41.6	59.9		9.0		35.2	52.1		9.1	29	16.8	55.0		10		17.3	54.1	
9.0	35	8.7	22.7	K	9.8	52	14.3	29.5		9.8	11	50.6	35.3		8.3		19.1	34.8	K	9.8		17.5	58.8	
9.4		12.8	25.6		9.3		19.7	57.7		9.0	12	1.6	33.4	K	8.0	30	46.4	35.1	K	6.7		38.7	16.6	Sj
9.2		29.8	46.1		9.8	53	8.0	5.4		9.3		18.4	45.5		9.8	31	9.9	8.6		9.1	50	8.1	6.1	M
9.8		31.9	0.0		8.0		23.3	21.0	K	10		39.7	26.6		9.8		50.5	57.0		10		26.1	59.0	

3246: $1^m\,59^s.29\ 2'37''.2\ B_1$, Ep. 1873.26

3353: röthlich bis feuerroth

3401—3460				3461—3520				3521—3580				3581—3640				3641—3700			
	12h—13h	—11°			13h	—11°			13h	—11°			13h	—11°			13h—14h	—11°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.3	50 47.5	54.7		9.4	5 39.0	38.3		9.5	20 41.2	27.2		9.5	37 11.8	26.9		8.8	50 33.3	54.9	
9.0	51.9	47.4		9.3	52.5	27.2	M	9.5	45.1	56.8		9.5	15.5	41.6		6.7	41.2	20.4	K
7.9	56.3	43.4	K	9.3	56.1	49.1		8.9	45.9	52.6		9.3	21.8	56.4		9.8	57.8	30.1	
10	51 9.4	32.9		9.8	6 4.7	43.0		9.7	21 2.1	40.4		8.8	28.1	6.1	K	9.9	51 11.9	33.0	
9.7	25.6	46.7		9.7	12.9	30.2		8.9	2.8	37.8		9.5	35.8	29.1		9.9	12.3	30.1	
9.5	41.0	37.2		8.7	15.2	25.1	K	9.4	29.6	38.4		9.7	42.0	43.4		8.9	50.1	19.7	M
9.0	52 5.7	21.0	M	9.5	37.5	48.4		9.0	22 43.0	19.4		8.0	53.3	39.0	K	9.6	51.4	57.9	
9.2	6.5	37.5		9.5	7 39.4	13.6		10	23 31.9	34.4		9.4	56.5	6.9		9.8	52 13.6	18.9	
9.8	39.2	17.2		7.0	8 14.9	34.7	Sj	9.8	49.9	53.6		9.5	38 0.8	26.5		8.3	18.1	4.4	K
9.5	48.6	49.0		7.5	34.6	51.2	K	9.5	58.2	28.6		9.5	1.4	36.3		8.5	53 26.6	13.5	K
9.4	53 14.8	25.8		9.4	53.6	44.7		9.5	24 13.2	53.3		5.6	13.0	41.7	K	8.3	54 35.0	20.0	K
9.3	19.2	16.4	M	9.2	9 5.2	40.3		8.9	17.3	37.7		9.6	21.7	1.5		9.3	41.5	0.6	
8.0	40.3	50.2	K	8.7	13.3	0.1	K	9.4	26.8	26.2		9.7	24.3	1.8		9.5	55 1.6	35.7	
8.8	54 3.2	35.0	K	9.8	18.6	53.3		9.5	35.0	6.2		9.7	33.3	52.4		9.8	5.7	56.6	
9.4	23.9	48.2		9.5	33.4	34.7		7.8	43.2	54.9	K	9.7	42.8	24.6		9.1	24.1	55.1	
9.8	29.4	49.3		8.0	34.4	45.5	K	9.5	45.0	16.1		10	39 24.9	32.7		9.9	28.0	25.2	
9.8	38.6	8.2		10	37.4	21.7		9.0	47.2	54.9	K	9.4	39.7	23.6		8.9	30.6	5.7	K
7.3	39.1	19.3	K	9.5	51.5	28.8		9.4	53.1	41.6		9.7	40 37.7	22.0		9.9	56 11.6	45.3	
9.4	51.2	17.8	M	9.8	10 2.9	2.5		10	54.9	51.8		9.9	40.0	45.6		7.5	27.8	25.8	K
9.5	55 27.7	14.5		10	3.8	21.8		9.4	57.0	15.4		9.8	46.8	40.8		9.5	28.1	56.0	
9.1	28.5	22.5		9.7	19.7	5.1		9.5	25 30.2	11.8		10	52.9	36.3		9.5	57 3.0	48.4	
9.3	28.8	54.3		8.9	31.3	20.4	K	9.9	26 22.5	40.8		9.5	41 19.9	36.7		9.0	28.1	56.4	
9.5	58.2	54.8		9.9	42.8	43.6		9.5	29.1	30.8		9.8	25.3	1.8		9.5	58 19.4	19.5	
9.2	56 3.1	0.4		9.8	11 7.1	37.2		9.7	42.5	21.0		7.7	42 1.3	49.8	M	8.3	27.5	8.5	K
9.1	7.1	47.9	M	9.8	8.4	27.2		8.3	46.6	55.5	M	9.3	22.6	57.8		9.8	36.5	33.9	
9.5	13.3	7.4		7.5	12.3	14.4	K	9.2	53.9	24.8		9.1	22.9	17.4		9.4	53.2	10.8	
9.6	14.0	35.8		7.3	20.6	52.9	Sj	9.5	27 22.9	13.4		9.7	43 10.7	31.4		9.5	59 51.9	6.3	
9.5	35.4	57.7		9.1	25.7	12.8	K	9.8	44.6	53.8		9.5	13.9	50.0		8.6	0 1.0	28.0	K
9.3	49.9	9.6	M	8.9	31.7	40.4	L	9.1	28 8.7	49.7		9.5	22.1	37.9		9.5	2.9	21.8	
9.8	50.7	33.0		8.0	58.1	43.1	K	9.9	18.3	12.2		8.8	36.3	3.5	M	8.2	38.0	52.2	K
9.7	57 2.8	26.9		10	12 20.3	59.3		9.0	41.0	25.9		8.5	50.2	40.0		6.5	43.4	7.8	Sj
9.7	5.1	26.9		9.0	21.7	42.3	K	9.4	41.3	0.0		9.3	57.0	8.5		9.4	44.0	44.8	
10	42.9	38.1		9.2	46.3	36.2		10	44.8	55.5		10	44 11.0	58.2		9.4	57.0	21.5	
9.5	51.6	9.5		9.9	13 29.5	41.9		9.5	29 14.6	50.9		9.3	43.1	55.0		9.5	57.7	41.0	
9.2	53.8	34.9		9.6	43.0	46.1		9.3	38.0	31.7		9.5	58.2	28.9		9.7	1 17.9	13.9	
8.9	53.9	5.7	Sj	9.5	46.7	14.5		9.0	41.9	34.8		9.1	58.7	54.3		9.2	37.0	42.2	
9.0	58 6.4	35.0	K	9.2	14 28.3	25.7		9.8	30 25.5	45.6		9.5	45 1.7	30.1		9.0	2 4.3	42.5	
9.8	8.9	49.6		6.7	29.0	49.0	Sj	9.2	52.1	37.1		9.5	7.5	8.0		9.0	9.6	28.2	K
9.8	59 18.9	55.7		9.4	49.4	42.5		9.1	31 18.3	11.0		9.3	16.6	59.5		9.8	23.9	58.3	
9.7	26.2	23.4		9.2	15 44.0	40.2		9.7	22.8	17.9		9.5	27.5	14.1		7.3	3 21.4	15.6	K
9.7	29.0	13.4		9.7	46.0	44.0		9.5	28.0	25.0		9.4	31.6	4.9		8.8	22.2	45.5	L
8.5	46.8	53.5		9.3	58.2	8.2		7.3	35.8	20.8	Sj	9.8	46.0	23.2		9.5	46.8	22.6	
9.3	0 27.0	13.0		9.5	16 1.4	23.1		9.5	32 20.3	46.3		8.4	46 0.1	35.6	K	9.0	48.8	12.4	K
9.6	32.8	49.3		9.8	17 22.3	57.3		8.9	34.5	58.1	K	9.5	32.7	33.7		7.8	59.9	55.4	B
9.5	51.6	49.0		9.5	49.4	39.2		9.7	48.1	33.6		9.4	47 18.6	42.7		9.3	4 12.8	50.2	
9.3	56.8	44.1		9.6	51.5	25.7		9.5	52.4	36.0		8.2	26.8	44.1	K	8.7	31.9	38.3	K
9.1	1 25.2	9.6	M	8.7	59.9	43.7	M	9.1	33 29.8	43.4	M	9.8	45.6	59.0		9.2	48.8	16.8	M
9.0	25.5	47.3	K	9.4	18 7.8	57.1		9.3	43.2	41.3	M	7.8	47.6	30.4	K	9.6	5 0.9	46.7	
9.5	2 2.5	9.2		9.3	10.3	56.0		9.7	34 36.5	4.0		10	58.2	50.3		9.1	19.8	49.8	
9.7	31.8	36.0		10	17.3	30.3		9.8	46.7	47.9		9.2	48 1.6	12.4	K	9.0	23.8	51.0	
9.5	41.6	19.4		9.7	25.4	38.7		9.8	51.3	35.1		9.5	13.7	14.7		9.0	34.9	28.0	
9.0	3 20.7	58.2	K	9.5	30.5	4.2		7.0	53.7	20.9	K	9.6	14.4	15.0		9.4	41.8	33.6	
8.3	41.4	9.2	K	9.4	41.6	13.7		9.8	35 6.3	35.2		9.4	32.5	41.7		7.2	56.1	9.3	
9.0	55.8	52.0		9.8	43.3	49.3		9.0	16.5	45.1	K	9.8	41.8	23.4		9.4	6 23.2	6.5	
9.7	4 3.3	4.1		9.2	19 0.4	17.3		9.4	17.3	22.4		9.8	43.6	21.2		9.5	53.3	57.4	
9.2	21.5	34.0		5.2	4.0	57.1	L	9.4	19.0	17.3		9.8	50.7	34.6		7.8	7 35.5	33.7	K
8.5	24.5	37.3	K	9.5	56.4	34.3		9.7	41.6	55.7		9.8	52.0	17.1		8.2	8 6.5	30.6	K
9.5	56.5	37.5		9.1	20 1.9	37.0		9.4	41.6	52.1		10	59.2	52.1		10	14.6	57.4	
9.8	5 23.1	3.2		9.4	25.2	4.7		8.5	36 3.7	10.4	K	9.1	49 25.0	58.7		9.8	50.0	32.9	
10	29.6	30.6		9.3	29.1	7.6		9.4	39.7	8.6		9.0	25.4	50.0		9.3	54.2	6.1	

3684: $4^m\,0^s.54\ 55'12''.7\ B_4$, Ep. 1873.35

3701—3760

m	14h m	s	—11° ′	
9.7	8	58.0	15.2	
9.7	9	10.6	12.5	
9.0		20.5	8.1	
9.6		56.2	43.0	
9.6	10	11.2	59.7	
9.5		21.7	28.2	
9.8		55.7	57.0	
8.8		58.0	7.9	K
9.0		59.4	55.1	K
8.7		59.8	42.8	K
7.8	11	1.4	23.3	Sj
9.8		15.0	21.5	
9.8		38.8	48.3	
9.3		39.9	24.0	
9.8	12	29.0	25.1	
8.3		57.6	41.9	K
9.5	13	2.7	54.0	
9.9		5.3	3.0	
10		9.5	2.7	
9.4		18.7	56.7	
9.1		23.3	10.2	K
9.8		25.4	3.5	
9.9		54.9	16.9	
8.9	14	20.6	52.7	
8.7		25.0	8.5	L
8.1		57.0	23.4	Sj
9.9		57.7	20.5	
9.5	15	36.3	52.8	
6.3		37.6	2.8	B
9.4		39.6	48.1	
9.4		47.6	44.2	
9.6	16	20.3	52.5	
9.4		31.4	11.5	
9.5		39.1	28.9	
8.5		40.1	45.6	
6.5		53.1	0.5	K
9.7	17	4.4	32.4	
9.4		21.8	38.9	
9.4		45.5	36.5	
9.2	18	17.3	23.0	
10		44.5	46.5	
9.8	19	5.1	30.3	
9.8		46.8	14.6	
9.4	20	14.3	15.0	
9.3		44.3	45.0	
9.6	21	36.2	5.6	
9.8		50.9	59.4	
10		54.3	19.2	
9.8	22	27.7	21.6	
9.9		33.2	15.2	
10	23	4.0	27.7	
10		9.2	1.0	
8.3		29.2	13.6	Sj
9.5	24	32.2	17.6	
9.5		38.3	8.5	
9.5		46.7	39.0	
9.4		48.2	12.3	
9.9	25	51.3	43.2	
10	26	29.4	54.0	
9.8	27	6.1	46.7	

3761—3820

m	14h m	s	—11° ′	
9.1	27	13.1	35.9	
9.4		14.6	24.2	
9.1		34.1	6.8	B
9.5		48.8	57.4	
9.1	28	11.6	37.7	
8.5		45.7	51.2	K
8.5		53.2	0.5	Sj
9.5		58.6	4.2	
9.0	29	6.8	57.4	K
6.0		16.3	41.2	B
9.8		21.1	54.6	
9.9		28.2	10.4	
9.2		38.6	25.1	
9.5	30	28.2	48.7	
9.3		42.0	5.8	
9.4		46.3	3.5	M
10	31	6.2	27.6	
9.9		18.1	12.6	
9.2		53.3	29.4	K
8.9		54.3	44.6	K
9.5		56.1	36.5	
9.3		56.1	30.0	
9.0	32	7.8	57.2	M
10		22.5	13.6	
9.1	33	1.6	11.6	M
9.6		16.6	32.6	
9.5		16.9	41.5	
9.1	34	2.5	39.5	K
7.0		10.5	36.8	K
9.7		11.5	5.4	
8.4		29.4	31.5	Sj
9.8		43.9	13.0	
8.9		50.2	58.5	M
9.5	35	27.2	45.1	
8.6		43.5	0.0	K
9.8		56.0	6.4	
8.3	36	26.8	0.2	Sj
9.8		31.9	34.7	
9.8	37	44.9	40.0	
8.4		52.3	44.5	Sj
9.8	38	17.8	40.8	
9.4		54.6	58.4	
9.5	39	42.2	45.0	
9.8		42.4	41.1	
8.5		51.3	45.6	K
9.1		59.1	56.9	
9.7	40	4.4	15.3	
9.9		43.9	13.5	
9.4		48.6	57.1	
9.5		49.8	20.9	
9.9	42	8.3	48.9	
10		9.3	27.0	
9.7		31.1	12.8	
7.0		44.4	24.8	K
9.8		50.9	39.5	
9.8		58.9	23.0	
9.3	43	29.3	25.7	
9.8		48.8	28.5	
9.3	44	45.8	16.3	
9.4		52.6	17.0	

3821—3880

m	14h—15h m	s	—11° ′	
7.3	44	59.8	47.0	M
8.5	45	24.7	38.0	K
10		43.5	15.4	
10		58.1	50.2	
8.6	46	18.9	4.9	Sj
9.8		28.0	52.8	
5.8		30.5	18.3	Sj
9.7		36.5	8.4	
10		37.4	14.0	
10	47	28.3	5.0	
9.4		44.7	47.2	
9.7		58.2	37.4	
9.1		58.9	44.3	
8.5	48	1.2	29.3	M
9.5		11.9	51.6	
10		30.9	50.1	
9.8		31.8	40.1	
10		50.7	44.1	
9.6	49	3.2	31.2	
9.8		20.2	37.3	
7.0		51.6	51.3	Sj
9.8		55.3	10.0	
9.5	50	15.8	55.5	
9.1		37.9	53.1	
9.9		42.4	57.1	
10	51	7.7	57.1	
10		20.0	33.7	
10		21.9	36.7	
9.5		30.7	18.6	
9.4		33.1	21.6	
9.2	52	16.2	16.0	
9.8		27.1	33.0	
9.4		38.3	52.2	
8.0		38.7	17.8	Sj
9.7		44.0	42.3	
9.8	53	6.1	33.5	
9.0		46.8	52.0	
8.6		49.9	44.6	Sj
9.6	54	8.1	40.7	
9.0		12.2	9.6	K
10		13.8	35.7	
9.0		26.2	10.3	K
9.6		35.0	43.4	
9.5		35.5	4.8	
9.7		40.4	50.5	
9.5	55	2.5	3.9	
9.2	56	3.6	18.0	
10		18.7	59.1	
9.2		25.8	28.5	
9.3		34.0	32.0	
9.4		40.4	56.2	
9.4		41.7	57.2	
8.3		46.8	6.1	Sj
8.6	57	1.8	49.7	B
9.8		14.9	48.6	
9.4		36.2	57.8	
9.8	58	10.1	7.3	
9.5		21.6	6.8	
9.8	59	7.5	37.2	
9.1	0	4.0	5.9	M

3881—3940

m	15h m	s	—11° ′	
7.5	0	13.4	29.5	L
9.5		23.8	5.2	
9.9		28.1	55.6	
10		39.5	51.0	
8.8		46.0	10.2	K
7.8	1	1.4	14.3	K
10		11.8	49.5	
9.5		27.4	37.8	
9.7		30.1	45.9	
9.9		30.9	41.3	
8.8		45.0	1.2	Sj
8.8	2	6.9	35.8	K
9.7		8.1	22.3	
9.8		12.4	42.3	
9.4		12.6	31.7	
9.4		16.7	0.2	M
9.6		17.3	53.4	
8.7		40.4	40.6	K
9.0		58.2	42.2	K
9.3	3	43.9	31.8	
9.8		46.1	56.6	
9.8	4	0.0	19.7	
9.8		3.4	32.4	
8.7		45.2	50.1	B
9.8	5	2.9	11.2	
9.5		14.0	56.8	
9.2		22.4	27.0	
9.7		43.8	40.2	
8.3		50.5	50.3	K
9.3	6	37.9	44.6	
9.1	7	13.8	30.7	
9.9	8	32.5	13.5	
9.5		33.2	55.5	
9.5		52.4	4.5	
9.0		59.6	0.9	K
9.8	9	17.7	1.4	
9.7	10	11.5	0.2	
9.5		22.4	54.6	
9.8		55.9	45.9	
9.6	11	0.8	51.7	
9.0		29.0	5.8	K
9.5		31.9	44.7	
9.0		45.3	27.8	
9.3	12	1.9	40.1	
9.7		14.7	38.8	
8.9		25.9	39.7	
9.2		27.4	14.0	
9.5		29.8	58.5	
9.8		34.2	31.7	
9.8		58.1	0.1	
8.3	13	34.7	33.7	K
8.2		43.5	2.3	K
9.6	14	10.6	51.4	
9.8		27.5	41.6	
9.8	15	6.6	32.3	
9.7		17.4	5.3	
9.0		36.8	46.7	
9.5		39.4	18.0	
9.7		55.1	16.0	
6.0		55.4	50.8	L

3941—4000

m	15h m	s	—11° ′	
9.8	15	59.5	21.2	
9.0	17	9.5	8.0	
9.8		40.4	49.9	
8.2	18	10.1	11.3	K
9.5		21.5	48.4	
9.2		28.4	39.9	
9.0		48.3	49.3	
9.0		59.0	28.1	Sj
8.9	19	37.9	47.3	
9.3		49.7	18.4	
9.7	20	5.0	42.5	
8.4	21	28.6	13.7	K
9.5		40.1	28.2	
9.6	22	11.7	43.4	
8.9		21.3	40.9	K
10		38.6	54.0	
9.1		39.4	47.1	
9.6		51.3	40.2	
9.2	23	7.4	21.7	
9.2		33.0	26.7	K
9.5		38.5	31.1	
9.5	24	17.6	4.7	
9.3		38.6	52.6	
9.0	25	31.2	13.7	
10		36.7	54.5	
9.5		52.6	52.8	
9.2	26	24.3	41.7	
9.9		29.7	34.1	
8.6		39.5	21.8	K
9.8	27	16.8	11.7	
9.4		18.7	22.5	
9.1		23.8	31.8	
9.0		25.3	11.7	
9.3		38.5	0.8	
9.0		40.0	53.4	
10	28	1.9	26.2	
9.0		30.4	31.2	
9.6	30	14.5	19.7	
9.3		20.4	22.2	
9.2		23.9	22.0	
10		47.4	42.0	
9.4	31	8.1	0.8	
9.3		8.3	46.4	
9.4		23.7	41.1	
9.5		38.3	42.6	
8.6		59.8	43.4	K
9.3	32	28.2	33.5	
8.9		46.8	47.3	K
8.5	33	12.4	24.0	Sj
9.4		37.0	32.2	
9.2		43.3	44.0	
9.4	34	32.4	4.6	
9.8	35	25.1	34.4	
9.8		28.6	33.1	
9.5		39.6	20.8	
10		47.6	43.8	
8.9	36	8.4	36.0	K
9.0		17.7	30.1	K
10		20.3	37.0	
9.5		34.5	39.4	

4001—4060					4061—4120					4121—4180					4181—4240					4241—4300				
	15h		−11°			15h—16h		−11°			16h		−11°			16h		−11°			16h		−11°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.3	38	1.2	34.3		9.9	57	8.7	48.6		9.1	14	7.4	5.9		8.3	31	28.5	23.5	K	9.7	47	49.9	13.2	
9.0		2.7	18.0		9.5		55.5	12.9		9.1		19.4	35.8		9.5		32.0	40.7		9.7	48	31.6	8.3	
9.3		22.7	14.2		9.3	58	0.9	23.3		9.3		46.3	54.4		9.5		36.1	28.4		10		47.4	26.2	
9.2		24.6	47.9		8.0		5.6	54.9	K	10	15	7.5	45.4		10		37.9	10.5		10	49	4.2	35.6	
9.5		35.5	40.9		9.6		6.0	15.2		9.3		25.8	40.5		9.7		47.9	8.4		9.7		14.3	58.7	
9.0		47.1	5.8		8.8		19.1	54.6	K	9.5		27.4	15.1		9.2	32	5.5	23.8		9.5		27.7	13.2	
9.3		49.2	27.8		8.3		22.4	44.3		9.5	16	0.9	20.0		10		38.1	24.6		9.0		47.0	44.2	
9.6	39	7.1	52.0		7.5		35.2	30.6	L	9.3		4.5	13.5		9.8		50.4	45.7		9.4		50.9	54.3	
9.1		13.1	46.2	M	9.7		51.1	55.3		7.3		10.7	33.3	Sj	9.2		53.1	57.4		7.2		57.2	50.9	K
8.0		20.1	46.1	K	8.7		55.3	8.2	K	9.4		46.4	9.3		6.5	33	5.3	33.0	K	9.8	50	9.2	38.7	
10		54.2	2.3		9.1		59.6	54.2	K	9.4		56.9	3.3		8.7		28.8	29.8	K	9.6		10.2	42.3	
9.5	40	35.7	30.1		9.4	59	3.8	43.0		8.6	17	1.2	32.7	K	9.2		31.4	27.4	K	9.5		21.3	19.3	
9.7	41	29.7	41.4		8.4		33.9	10.4	K	9.8		13.3	2.9		9.6		36.9	22.7		9.5		37.3	31.1	
8.2	42	15.6	7.6	L	8.0		43.5	31.6	K	9.0		56.5	51.8	K	9.5	34	24.3	43.5		9.8		38.9	21.1	
9.8		23.2	0.7		9.5		54.6	50.3		8.2	18	18.4	9.0	K	9.8	35	4.3	12.5		9.3		41.0	13.2	
9.5		41.0	22.5		9.6	0	12.1	52.1		9.2		35.1	20.6		9.6		14.8	15.1		9.0		41.3	52.3	K
9.0		56.2	35.1		9.3		24.8	59.0		10		53.8	43.2		9.4		25.7	27.9		9.5		54.0	12.8	
9.4	43	18.4	58.8		9.5		34.9	40.5		9.1		58.2	56.6	K	9.0		45.3	30.5		9.0	51	12.6	49.6	
9.7	44	15.4	38.0		8.9	1	1.6	57.2	K	9.6	19	1.9	50.8		9.9	36	0.5	21.7		9.7		14.7	0.7	
8.9		15.7	35.9	K	9.0		19.8	10.1		8.5		4.3	45.7	Sj	8.8		8.2	43.1		9.8		23.1	56.6	
9.7		18.8	43.2		7.8		20.4	58.7	Sj	9.4		17.4	5.6		10		12.3	53.0		9.5		24.1	23.5	
9.8		24.4	54.0		9.0		49.6	55.9	K	9.6		17.7	40.4		9.5		12.9	25.0		10		26.7	0.6	
10		32.9	45.5		9.1	2	9.7	14.5	K	9.3		22.3	40.5		9.7		14.1	57.2		9.8		30.0	31.6	
9.5		57.0	43.5		9.5		39.8	52.3		9.1		29.4	24.6		8.9		27.6	57.0	K	9.6		53.4	54.0	
8.8	45	2.7	23.7	K	9.5		40.6	43.5		9.2		40.4	6.9		9.4		31.8	4.4		9.7	52	4.4	52.9	
9.0		6.8	58.0	K	8.7		53.2	41.4	Sj	9.5		44.9	8.9		9.2	37	18.3	41.5		9.4		6.4	40.8	
9.5		50.6	12.1		8.7	3	21.6	23.4		9.0	20	22.4	20.6		9.8	38	25.7	41.8		9.7		6.9	46.4	
9.0		57.3	41.0	Sj	9.5		31.9	56.5		9.2		39.3	31.4		9.8		31.9	56.0		9.0		8.4	31.6	
9.5	46	7.1	31.3		9.5	4	5.7	39.4		9.0		46.4	56.4		8.7		56.3	20.9	K	9.6		11.3	44.6	
9.5		31.2	36.3		9.5		24.5	44.7		10		47.2	48.4		9.2	39	0.5	35.8		9.2		50.8	51.4	
9.3		37.9	4.4		9.4		30.3	27.0		8.6	21	7.2	42.1	K	9.5		14.0	15.0		9.5		54.6	1.8	
9.4		38.6	50.5		8.7		49.4	58.6	K	9.8		32.8	33.2		9.5		23.3	11.6		9.5		59.9	3.3	
9.5		59.1	33.4		10	5	13.5	19.1		9.4		50.1	16.2		9.8	40	0.1	15.2		9.8	53	10.1	22.6	
9.6	47	31.0	52.7		9.3		30.9	26.9		8.3		50.9	42.4	K	9.8		29.0	47.1		9.7		10.3	45.0	
10		34.3	51.8		10		46.3	40.8		9.0	22	15.3	31.8		9.1		56.1	8.9		9.4		45.5	23.6	
9.6	48	33.1	35.7		5.8		49.5	27.5	Sj	9.0		19.2	0.2		9.5	41	57.7	51.2		9.4		45.6	52.2	
9.4	49	4.6	3.1		8.5	6	2.8	21.4		9.4		26.6	58.0		8.9	42	19.6	36.4		9.2		46.4	38.0	
9.7		54.5	43.3		9.5		3.8	29.5		9.7		49.4	11.5		8.5		26.4	3.6	K	9.0	54	9.4	32.5	
9.8	50	12.4	51.1		9.4		6.2	51.9		8.7	24	0.9	48.1	K	9.5		48.9	7.2		9.7		21.3	33.2	
9.3		28.9	11.5		9.3		55.0	0.5		9.8		2.0	0.7		9.5	43	44.2	25.8		8.4		19.8	41.0	K
10	51	12.3	51.6		8.5		58.5	20.5	L	9.2		25.1	3.2		9.8	44	19.2	51.1		9.3		22.4	41.7	
9.8		13.4	56.7		9.2	8	48.0	28.5		8.5		29.9	38.4	K	10		22.8	26.0		9.6		23.0	43.3	
9.8		21.5	57.7		9.5	9	27.4	39.4		9.8		34.5	2.2		9.5		42.8	59.3		9.2		42.2	9.9	
7.7	52	57.2	55.5	L	8.8	10	3.0	41.8	K	10		44.1	45.5		9.0		45.9	26.9		9.2		52.5	26.3	
9.5	53	10.5	11.7		9.3		14.9	28.9		9.5	25	5.7	57.9		9.0		52.3	12.0		9.6	55	4.1	42.8	
9.8		17.6	23.3		9.4		21.1	8.0		9.6		48.5	8.0		7.4	45	7.2	25.8	K	9.5	56	5.4	6.6	
9.0		18.8	44.3		8.9		29.5	33.4		9.8	26	36.0	7.4		8.4		30.0	30.9	K	9.5		33.0	5.4	
9.0		39.3	31.7		8.3		44.7	8.6	K	9.8		37.9	30.6		9.7		48.9	18.4		9.4		52.1	59.6	
8.4	54	1.5	10.0		9.5	11	15.6	13.9		9.4		52.6	39.9		9.2	46	12.2	49.9		10		57.5	49.2	
10		13.2	47.1		8.6		37.0	46.5	K	9.7	27	25.8	8.5		9.1		25.7	48.9		9.4		58.7	50.7	
9.0		23.1	21.0	K	9.0		49.9	33.5		9.1		37.9	15.5		6.5		35.8	33.0	K	9.5	57	13.2	43.3	
9.2		25.6	13.6		9.0	12	14.4	36.0		9.1	28	12.7	25.2		9.8		45.3	56.6		9.0		45.6	26.3	
10	55	4.7	52.9		9.5		15.0	53.9		9.2		13.2	30.1		8.8		45.6	18.7		9.0		49.8	6.2	
9.8		47.3	42.1		9.3		27.0	51.7		8.8		30.2	24.9		7.6	47	11.0	3.7	K	9.3		51.6	53.7	
9.3		59.6	19.0		9.4		27.8	10.7		8.2	29	14.3	2.9	K	8.5		25.3	39.2	K	9.3	58	3.9	22.0	
7.3	56	25.7	27.3	L	9.5	13	3.5	37.0		9.4		27.0	18.9		9.7		25.7	33.1		9.0		33.1	34.8	K
7.6		27.4	2.9	Sj	9.3		6.4	40.0		7.7		27.3	34.2	Sj	8.7		31.7	6.4	K	9.8		37.2	18.0	
8.2		28.1	3.0	K	9.8		8.2	54.4		9.9	30	3.7	21.8		8.9		39.8	11.9	K	9.3		50.7	6.2	
9.8		46.2	49.9		9.8		38.9	5.9		8.4		27.5	14.7	Sj	9.7		42.2	42.6		8.8	59	16.0	59.0	
8.5	57	5.3	14.2		9.5	14	2.2	0.6		9.8		59.5	8.8		9.7		47.0	42.3		9.8		21.4	37.8	

4301—4360

	16h—17h	—11°	
m	m s	′	
9.8	59 45.4	54.1	
9.4	0 9.7	11.9	
9.3	15.5	15.7	
7.1	20.3	50.3	K
8.8	51.2	17.5	
9.8	59.2	43.4	
9.5	1 50.1	24.9	
9.5	52.1	19.6	
9.9	55.7	45.5	
9.9	2 24.2	48.4	
9.8	33.6	35.6	
9.1	43.8	33.8	K
9.3	3 0.8	52.0	
9.4	11.1	33.8	
9.0	56.1	27.3	
8.7	4 16.6	25.7	K
10	29.7	22.4	
9.5	38.3	51.9	
9.0	5 2.0	44.2	
9.8	25.9	48.1	
8.7	29.7	5.9	
9.7	38.4	47.4	
9.0	54.3	25.7	
9.3	54.5	18.9	
9.4	7 28.2	35.1	
9.6	35.3	43.3	
9.8	42.6	56.7	
9.2	54.4	1.9	
9.8	8 2.7	18.0	
9.5	3.3	36.5	
9.4	35.1	25.7	
8.8	56.8	59.1	
9.4	9 6.3	2.3	
9.5	12.5	42.8	
9.4	35.1	58.0	
9.7	51.2	47.8	
9.3	10 28.1	20.9	
9.8	46.5	29.5	
9.7	48.5	41.0	
9.8	11 2.6	15.8	
7.4	4.1	49.8	
9.8	27.2	14.0	
9.4	44.7	27.6	
8.0	48.1	11.7	Sj
8.8	12 0.8	24.2	
9.8	13.6	48.1	
9.8	16.6	6.6	
8.3	16.7	28.5	
7.8	21.0	27.9	
9.2	31.6	18.0	
9.8	38.2	40.5	
8.8	55.1	23.7	
9.8	13 0.0	31.7	
7.3	6.3	54.5	K
7.8	16.2	47.9	K
10	16.6	0.6	
9.5	19.2	18.4	
9.8	27.9	44.8	
9.8	14 1.6	57.7	
9.4	6.6	4.5	

4361—4420

	17h	—11°	
m	m s	′	
9.3	14 57.0	22.1	
9.3	15 23.9	32.7	
9.8	25.6	9.0	
10	35.8	29.8	
9.7	37.0	25.5	
9.7	55.4	50.3	
7.8	59.2	33.1	K
9.5	16 6.7	13.0	
9.0	39.9	45.4	
9.5	42.6	29.8	
9.8	54.0	54.3	
9.1	17 38.8	50.3	
9.8	18 16.2	0.3	
9.8	18.3	22.0	
9.8	30.0	23.8	
9.1	45.6	24.0	
8.8	46.2	32.8	K
9.6	59.1	14.8	
10	19 31.0	36.0	
8.4	45.0	51.2	M
9.4	20 33.2	22.6	
9.5	38.3	30.7	
9.5	41.2	34.5	
9.1	52.7	32.3	
8.3	55.0	55.0	K
9.8	21 31.9	2.4	
9.5	44.8	17.3	
7.9	45.6	1.2	K
9.4	52.3	29.1	
8.5	22 14.5	30.3	
9.1	43.5	15.2	
9.3	56.0	39.5	
9.3	56.3	4.4	
8.9	23 4.3	14.0	
9.7	14.2	34.4	
9.8	14.7	25.7	
8.3	30.1	43.0	K
9.3	35.8	21.1	
9.2	44.6	45.1	
10	54.5	45.1	
8.4	24 6.8	50.4	K
9.4	23.7	0.1	
8.0	44.9	8.7	K
9.1	46.2	45.0	
9.4	25 24.3	41.4	
9.6	58.2	21.5	
10	26 10.4	59.1	
9.4	20.0	4.1	
9.5	39.8	55.8	
9.0	40.1	8.5	K
6.0	42.1	8.2	Sj
9.3	47.8	42.6	
8.6	47.9	35.8	R
8.5	27 18.2	26.2	K
9.6	44.5	47.0	
9.4	45.5	45.7	
8.7	28 2.9	55.1	K
9.3	5.2	52.7	
8.5	42.4	59.4	M
9.4	45.6	44.0	

4421—4480

	17h	—11°	
m	m s	′	
9.1	29 7.6	27.6	
9.8	19.0	1.5	
9.4	30.7	27.7	
9.6	30 21.3	5.9	
9.0	32.1	25.8	
9.2	35.0	44.4	
9.5	45.4	32.3	
9.1	45.4	21.4	
9.4	31 18.4	25.2	
7.8	24.5	10.8	K
8.8	29.7	1.5	K
9.3	41.9	25.5	
8.9	42.1	45.4	
9.8	49.4	41.3	
8.0	49.9	22.8	K
9.3	32 25.9	59.9	
9.3	49.7	27.5	
9.3	33 15.4	56.2	
9.7	17.2	4.7	
9.8	34 7.3	18.1	
9.8	23.0	47.4	
9.6	37.6	29.8	
9.4	40.1	33.4	
9.1	35 12.2	41.7	
9.5	16.2	13.3	
9.4	23.9	22.7	
9.9	26.8	36.7	
9.9	26.9	43.0	
9.0	31.0	36.2	
9.7	36 14.4	43.8	
8.9	16.7	57.2	
9.5	36.1	21.1	
9.1	44.0	14.3	
8.9	48.6	41.7	
9.1	37 3.1	46.8	
8.5	35.0	31.0	M
9.1	38 19.5	49.1	
9.4	39 28.7	42.3	
9.3	40 28.1	51.6	
7.8	41 0.6	17.3	K
9.4	5.9	37.7	
9.0	9.0	38.6	
8.8	28.5	50.9	
9.4	49.0	53.1	
9.5	42 8.0	56.5	
8.9	28.5	44.9	
9.6	49.2	57.8	
9.6	53.8	30.0	
9.6	53.8	49.3	
9.8	43 8.9	54.4	
8.6	53.1	16.9	
9.5	44 30.5	28.1	
9.5	45 2.4	41.0	
9.8	32.9	42.3	
6.5	46 3.1	18.0	K
9.8	4.0	44.7	
9.1	4.4	38.3	
6.8	50.5	36.0	K
9.5	47 0.7	11.2	
9.5	18.2	0.5	

4481—4540

	17h—18h	—11°	
m	m s	′	
9.0	47 32.1	54.8	
8.8	52.2	31.4	M
9.1	48 12.9	13.7	
9.4	21.6	1.6	
9.5	31.5	34.0	
8.3	33.3	54.1	K
9.1	39.9	0.2	
9.8	49 3.2	13.9	
9.4	21.2	29.8	
7.7	31.9	30.6	K
8.3	38.3	39.8	K
9.1	40.1	14.0	
9.3	44.6	1.2	
9.4	57.7	38.5	
8.8	50 2.7	55.5	
9.1	26.4	59.8	
10	32.0	46.4	
8.1	34.0	50.8	K
9.4	36.5	40.4	
9.7	40.6	0.6	
8.9	41.2	44.2	
9.4	50.0	22.1	
9.3	51 3.8	28.1	
9.4	4.5	40.9	
9.4	11.7	57.9	
9.3	15.0	9.4	
8.5	51.5	32.0	K
9.1	52 6.9	15.3	
9.8	11.6	3.8	
8.4	16.0	14.9	M
9.6	29.8	16.3	
9.8	52.2	41.6	
9.3	53 8.1	27.6	
9.7	25.6	36.7	
9.1	30.7	54.2	
9.5	38.6	35.3	
9.2	54 4.4	6.1	
9.5	31.7	10.6	
8.5	42.3	37.9	
9.8	54.5	21.3	
9.1	55 22.0	18.2	
9.8	25.4	30.0	
9.8	51.8	3.7	
9.9	56 21.8	23.0	
10	29.8	21.8	
9.5	50.5	16.6	
8.0	58.1	30.5	K
9.1	57 17.0	25.7	
6.8	26.9	1.4	K
9.7	38.4	45.9	
8.9	50.2	42.9	
9.0	58 7.7	19.5	
9.4	11.1	36.0	
8.8	26.7	56.7	
8.5	41.3	29.3	M
9.3	44.9	36.9	
9.5	59 11.6	55.6	
9.8	24.7	44.7	
9.8	42.5	23.0	
10	0 30.2	36.8	

4541—4600

	18h	—11°	
m	m s	′	
7.1	0 52.6	45.3	Sj
9.2	56.6	36.5	
9.7	57.7	49.0	
9.3	1 12.5	21.8	
6.8	39.6	44.6	K
8.9	46.9	46.0	K
9.4	2 9.7	48.0	
7.3	42.4	2.0	K
9.3	55.5	17.4	
9.2	3 0.4	6.9	
9.8	10.5	26.3	
9.5	23.1	54.4	
9.8	23.6	36.8	
7.2	24.0	19.6	K
9.7	59.8	12.1	
9.5	4 2.5	4.1	
9.0	23.2	22.5	K
9.8	37.9	50.5	
9.4	38.3	15.2	
9.1	5 9.0	15.5	
9.1	13.7	26.6	
9.0	26.1	55.5	
9.8	26.3	36.0	
9.3	36.8	30.9	
9.5	6 23.2	6.7	
8.5	34.6	15.2	K
9.9	51.9	51.1	
9.8	7 6.7	9.2	
9.5	20.3	47.6	
9.3	29.5	23.5	
9.5	33.7	56.0	
7.8	52.1	3.3	K
7.5	59.5	13.3	K
9.7	8 3.3	43.1	
9.6	9.4	3.4	
9.3	23.2	36.9	
9.8	29.8	46.5	
8.0	44.2	27.1	M
9.4	45.8	51.1	
9.8	9 11.7	32.8	
9.8	17.9	48.0	
9.3	19.3	51.8	
8.7	36.1	17.5	M
9.4	41.8	9.3	
9.8	46.4	58.3	
8.9	58.6	20.7	M
9.5	10 0.4	57.8	
9.9	3.9	51.7	
9.5	48.2	34.1	
8.6	49.3	3.7	M
9.3	51.6	19.8	
9.1	57.7	29.0	M
8.7	11 1.7	41.3	
9.4	22.7	0.3	
9.1	39.5	58.2	
7.5	47.1	20.6	L
9.6	12 1.1	50.2	
9.5	2.2	30.2	
9.5	25.4	52.6	
9.1	35.2	20.2	K

4601—4660					4661—4720					4721—4780					4781—4840					4841—4900				
	18h		−11°			18h		−11°			18h		−11°			18h		−11°			18h–19h		−11°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.8	12	38.4	42.2		9.1	23	40.6	52.8		9.7	35	2.3	10.7		9.5	43	16.7	37.5		9.8	53	32.2	53.6	
9.4	13	10.6	21.9		9.7		54.0	20.5		9.8		7.2	47.3		9.4		35.1	56.4		8.8		47.6	42.4	
9.2		14.4	40.4		8.5		54.3	45.0	L	10		8.4	13.0		9.1		40.5	19.2		9.0	54	27.7	21.1	
9.3		22.6	45.4		9.4	24	5.4	55.6		9.6		18.7	38.8		9.5	44	7.0	13.0		9.4		32.8	58.2	
9.1		42.0	42.2		9.1		7.4	51.6		9.8		25.9	17.1		9.8		9.2	30.1		10		37.6	40.6	
7.8		43.5	58.9	Sj	9.8		11.8	20.7		6.8		27.5	28.5	Sj	7.8		10.9	48.0	K	9.5		47.7	20.8	
9.1		49.4	43.7		9.0		14.7	23.4	K	9.4		29.8	11.0		9.2		11.3	42.1		9.9		56.4	36.0	
9.1		50.3	28.2	M	8.9		33.8	26.1		9.8		32.2	4.4		9.5		19.8	4.5		8.9	55	2.7	19.7	
9.7	14	9.0	30.6		9.5		48.0	58.3		8.7		34.5	37.8	Sj	9.5		30.1	21.0		7.8		4.2	14.6	K
9.7		13.0	46.6		9.0		55.5	42.4		9.1		49.1	53.1		9.4		37.8	3.3		9.3		7.8	48.3	
9.5		23.4	52.6		9.5	25	22.9	22.1		9.5		58.6	45.7		9.7		43.0	44.5		9.6		8.4	5.7	
9.8		30.6	33.9		8.8		26.1	44.2		9.5	36	3.0	42.0		9.5		51.7	30.1		6.7		9.8	23.7	K
8.3		31.9	55.5	K	9.3		29.1	30.9		9.4		14.4	1.7		8.2		56.0	36.5	K	9.1		30.2	51.3	
8.9		46.6	40.6		9.2		44.1	18.0		9.1		35.9	25.0		9.8	45	6.6	9.1		9.0		38.3	35.5	M
9.2		48.4	44.1		9.3		53.1	40.6		6.8	37	0.2	36.0	K	7.8		10.7	31.3	Sj	9.3		45.3	35.3	
8.8		48.7	20.9		9.6	26	9.8	44.7		9.5		0.8	21.1		9.8		17.0	20.4		9.4		49.2	20.0	
9.5		54.3	27.6		9.2		14.9	35.6		9.1		7.3	12.3		9.5		17.1	52.2		9.3	56	13.0	41.0	
9.4	15	9.8	52.0		10		51.5	28.2		9.4		22.7	1.7		9.8		22.9	33.1		9.5		27.2	55.3	
9.3		22.7	29.9		9.5		52.2	1.3		9.6		30.3	35.5		9.8		29.5	46.7		9.5		37.2	17.0	
9.4		23.7	50.5		9.8		57.2	34.0		9.0		34.5	11.4		9.7		36.7	17.9		9.8		55.4	31.7	
9.8		57.8	44.9		5.3		58.9	5.1	Sj	9.9		49.6	9.4		9.4		38.0	17.5		9.3		58.7	17.5	
9.5	16	2.4	58.2		9.5	27	13.4	54.1		9.0		51.4	15.3		9.7	46	1.8	38.0		9.5	57	1.2	14.0	
9.5		7.7	17.9		9.5		39.5	47.0		9.7		54.7	32.1		9.8		11.2	10.9		9.9		2.3	25.5	
9.0		10.0	19.0		9.8	28	0.0	50.5		9.7	38	35.4	7.9		7.8		21.3	46.1	K	9.7		15.3	5.5	
9.4		22.1	27.6		9.4		0.3	0.8		9.7		40.2	32.1		9.0		24.2	49.1	M	9.3		16.4	46.7	
8.7		43.7	26.2	Sj	9.3		43.2	10.4		9.8		58.2	21.2		9.5		28.5	9.9		8.8		30.4	46.2	
9.6		47.3	33.8		9.3		49.0	56.8		9.3	39	0.5	50.0		9.8		46.5	12.1		9.8		37.6	11.2	
9.8		58.6	15.9		9.4	29	3.7	7.6		8.4		9.7	22.2	Sj	9.8		57.7	26.2		9.0		38.8	29.2	Sj
9.7	17	19.3	41.3		9.5		4.2	59.3		9.6		41.4	1.7		9.5	47	10.1	58.8		8.8		50.2	0.2	Sj
9.1	18	29.7	48.1		9.2		18.2	59.4		9.3		45.0	49.0		9.5		25.9	18.6		8.8	58	12.0	48.7	K
8.0		36.9	26.1	Sj	9.4		28.4	47.3		9.0		53.8	42.4		9.4		31.2	28.2		7.5		14.2	51.7	K
9.1		53.9	53.9		8.5		45.4	28.3	Sj	8.9		55.6	16.4	M	9.2		33.5	2.8	K	9.5		30.4	31.2	
9.5		55.0	49.2		9.5		54.7	1.4		7.2	40	15.7	32.9	K	9.0		42.6	55.4		9.4		58.4	32.5	
9.0		57.6	29.8		9.1	30	6.3	22.0		9.6		36.1	10.8		9.5		46.9	0.2		9.5	59	22.1	11.7	
9.8	19	26.1	19.7		9.3		18.4	32.5		9.8		39.2	9.8		9.1		53.5	12.5	M	9.0		41.4	32.0	
9.5		31.2	21.8		9.2		24.6	7.0		9.0		41.1	51.8		9.1		54.8	13.0	M	9.2		48.2	20.6	
9.8		38.8	45.1		9.4		29.8	15.5		8.0	41	12.7	7.9	Sj	9.5	48	17.3	9.0		9.0		56.6	12.6	
9.1		44.9	48.9		9.8		30.8	18.0		8.0		21.6	56.8	K	7.2		20.0	30.1	Sj	9.5	0	16.1	3.9	
10		45.1	40.2		9.2		59.1	45.0		9.8		22.8	4.4		9.8		21.4	44.4		8.5		25.8	24.9	Sj
9.2		55.3	39.2		8.8	31	17.2	9.1	M	8.8		24.5	20.0	K	8.7		38.3	37.0	K	9.3		30.3	59.2	
9.5	20	3.8	46.6		9.4		52.6	5.7		9.5		35.4	41.2		9.5		50.2	59.3		8.9		32.6	43.1	
9.0		8.5	10.0	M	7.3		53.5	13.8	Sj	9.1		39.8	35.6		9.5		53.6	55.7		9.0	1	13.4	34.0	
9.4		17.3	58.9		9.7	32	10.0	0.8		9.5		41.4	24.2		9.1	49	30.7	23.4		9.4		18.2	18.0	
9.1		30.9	53.3		9.0		21.0	11.3	M	8.8		42.1	42.4		9.4		37.7	23.6		9.5		30.0	55.0	
9.4		44.7	47.7		9.8		37.9	0.1		9.5		42.7	14.4		9.0		57.0	41.8		9.0		31.1	7.3	
9.3	21	58.9	51.8		9.1	33	7.8	8.7		9.3		57.2	19.6	Sj	8.8	50	9.7	0.0		9.3		43.9	13.9	
9.8	22	6.8	31.1		9.3		10.3	15.0		9.7	42	1.2	18.8		9.3		24.2	51.1		9.6		45.7	2.9	
8.5		9.1	32.7	M	9.4		15.2	51.1		9.4		1.9	3.9		9.5		35.3	33.3		9.3		56.6	13.4	
9.5		9.3	27.7		8.5		36.4	30.1	K	9.5		2.4	56.5		9.0		50.9	38.2		9.3	2	10.3	59.4	
9.2		28.0	58.7		9.5		41.3	4.4		9.4		12.7	30.5		9.8	51	16.8	9.5		9.0		12.8	10.5	
9.0		38.9	53.7		9.4		42.9	26.4		9.5		16.8	34.8		10		25.0	8.3		9.8		17.2	56.8	
9.5		46.0	41.8		9.3		43.7	30.6		9.3		24.1	16.8		9.0		27.0	25.6		9.1		20.5	41.6	
9.8		58.3	45.3		9.6		50.8	11.9		8.7		26.4	9.8	K	9.5		33.4	40.0		9.0		21.1	27.5	K
9.5		59.6	50.1		9.5	34	2.0	20.6		9.5		34.3	48.8		9.7		39.1	14.2		9.8		44.2	42.9	
8.3	23	5.0	59.0	K	9.8		22.1	29.3		9.1	43	1.3	43.8	M	9.0	52	14.2	6.7		9.2		47.7	29.7	
9.2		26.1	46.8		9.0		22.2	33.3	K	9.8		2.4	10.3		9.1		16.7	37.0		9.2	3	4.7	15.6	
9.5		30.0	40.5		8.5		25.4	14.6	L	9.8		3.0	58.1		9.0		23.9	6.5		9.5		11.6	1.9	
9.6		33.4	43.4		9.4		27.8	3.1		9.7		3.8	33.4		8.8		44.6	18.1	K	9.6		21.2	31.5	
9.4		37.0	19.5		9.5		38.6	45.5		9.1		6.1	15.6		9.7		56.6	52.7		9.6		40.7	0.4	
9.1		40.0	57.3		9.7		50.7	17.7		9.4		14.9	8.4		8.9	53	22.2	17.5		9.3		58.8	56.5	

4901—4960					4961—5020					5021—5080					5081—5140					5141—5200				
	19h		−11°			19h		−11°			19h		−11°			19h		−11°			19h		−11°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.3	4	6.8	51.8		7.2	12	48.9	33.9	Sj	9.8	22	27.6	41.3		9.4	33	40.5	27.6		10	41	43.3	46.0	
9.5		24.9	28.6		9.4		49.1	23.0		9.1		31.8	52.0		9.7		48.1	45.6		9.9		44.1	37.9	
9.5		26.3	27.3		9.0	13	25.3	18.5	K	9.1		34.5	32.9	M	9.5		50.2	48.9	M	7.2		44.8	45.9	K
7.2		40.3	47.2	Sj	9.0		30.8	12.7		10		35.1	15.9		9.5		51.7	2.2		7.7		51.8	5.0	L
9.2		44.4	30.9		9.8		35.7	34.2		6.8		54.8	47.2	K	8.5		52.6	36.4	M	9.5	42	24.4	35.0	
9.4	5	4.9	53.3		9.4		44.7	47.3		9.0	23	10.2	18.7	M	8.5		54.9	55.1	K	9.0		35.0	8.7	
9.8		15.8	24.6		9.5		54.0	48.0		9.4		22.3	11.4		9.1	34	2.0	23.5		9.0		36.0	9.1	
9.0		22.7	13.0		9.4	14	3.4	30.6		9.7		32.3	6.2		9.0		7.0	50.9	K	9.4		40.9	48.6	
9.0		24.2	14.3	M	9.0		17.4	31.1		9.6		59.7	6.5		9.5		24.0	19.1		5.9		48.0	7.3	K
9.1		30.1	48.7		9.5		28.0	15.8		7.3	24	1.6	34.5	Sj	9.5		24.4	52.4		9.3		56.9	7.1	
9.8		32.5	0.2		9.0		31.0	12.9	K	9.5		13.4	26.1		9.2		30.9	46.3	K	9.0	43	14.2	24.2	
8.5		33.9	28.0	K	7.5		31.8	53.5	K	9.0		18.5	11.0	M	9.5		33.6	30.2		8.8		19.7	39.2	
7.3		51.1	26.8	K	10	15	5.3	16.5		10		18.8	8.5		9.4		48.0	10.1		9.5		20.0	37.9	
9.5		57.2	8.8		9.8		5.8	19.6		9.6		30.3	53.8		9.5		53.7	38.6		9.2		34.0	17.5	K
9.3	6	10.3	55.2		9.8		13.4	35.8		9.4		32.3	48.2		9.5	35	2.9	49.3		9.5		40.4	31.5	
8.8		33.5	44.9		10		21.3	30.9		9.6	25	1.9	59.1		8.5		6.1	29.4	Sj	7.5		42.5	18.4	K
9.5		36.1	48.2		9.4		29.4	48.5		8.5		20.4	41.0	L	7.8		11.6	0.6	K	9.3		45.3	45.1	
8.9		44.2	7.0		9.4		38.5	34.6		9.3		27.2	50.0		9.5		28.0	14.9		9.8		46.6	39.3	
9.4		52.1	9.4		9.9		40.8	19.7		9.2		30.2	50.7		9.8		34.5	14.5		7.0	44	8.2	15.1	K
9.5	7	10.2	9.0		9.7		45.3	32.9		9.1		43.4	54.3	M	9.5	36	5.2	44.0		7.7		20.3	44.3	K
9.0		21.6	57.6		9.0	16	5.5	34.0		9.5		56.1	49.6		9.5		11.5	19.4		9.8		22.1	58.5	
10		31.8	47.8		9.8		7.7	12.9		9.5	26	6.5	21.8		9.1		14.6	47.8		7.8		26.4	19.4	K
9.6		40.3	16.0		9.7		29.1	3.1		9.5		11.7	48.4		9.5		17.8	41.5		9.8		30.3	14.8	
9.3		47.1	54.2		9.5		43.7	11.7		8.6		23.1	35.5	K	9.8		21.5	17.6		9.7	45	9.2	55.2	
9.2		53.9	34.4		9.5	17	5.9	25.0		9.5		38.8	27.3		8.5		23.8	22.1	K	9.8		24.4	19.9	
9.4		58.9	32.0		8.2		15.5	47.2	K	9.9		43.6	21.4		8.5		28.2	27.5	K	9.5		27.9	31.5	
9.0	8	15.2	59.4	K	8.9		18.2	4.1	M	10		46.2	34.9		10		34.6	25.0		9.3		39.1	58.8	
9.1		16.0	36.1		9.8		31.0	39.6		8.4		49.0	29.0	Sj	8.2		42.7	32.0	K	9.0		39.9	18.3	M
7.5		24.9	49.3	Sj	9.5		35.3	16.7		9.5		51.7	58.4		9.9	37	22.1	28.8		9.3	46	20.3	49.9	
9.3		30.0	35.7		8.9		47.8	30.0	K	8.8	27	25.0	5.6	M	9.3		34.5	53.1		9.5		21.7	20.1	
9.0		33.8	32.5		9.0		52.2	4.7		9.5	28	12.7	46.1		9.3		40.2	31.3		9.5		39.5	9.6	
7.0		48.6	13.8	K	8.5		58.6	33.1	Sj	9.3		31.0	57.5		9.4		44.0	59.4		10		52.1	50.0	
9.6	9	16.2	1.0		9.4	18	3.5	29.9		9.6		32.9	42.6		8.6		50.0	14.1	M	9.4	47	12.0	4.8	
8.9		21.4	49.4		9.5		5.5	50.8		8.8		34.9	33.2	M	9.0		58.9	0.4		10		31.3	20.7	
10		29.1	3.1		9.4		7.3	52.8		8.9		39.5	41.1	Sj	9.2	38	7.3	1.2		9.0		42.2	10.8	Sj
9.3		35.5	16.6		9.6		13.2	52.5		9.8		50.5	54.4		9.5		20.9	4.0		9.1		58.9	40.0	K
9.0		41.2	8.9	K	8.2		15.1	54.1	K	9.4		52.7	56.3		8.9		30.1	17.8		9.2	48	6.0	23.9	
9.0		44.2	14.0	K	9.2		32.4	45.1		9.8	29	9.4	20.2		9.8		39.8	19.6		9.1		18.9	42.1	K
9.0		56.1	33.5		8.8		36.9	22.6	M	9.9		18.6	30.6		9.0		40.4	50.0		9.5		45.2	56.9	
8.3		56.1	40.4	L	9.5		42.8	14.1		9.5		32.7	0.4		10		43.3	44.2		9.8	49	14.0	13.8	
9.5	10	1.2	52.6		9.5		46.7	5.0		9.8		41.2	39.8		9.4		54.2	9.7		9.5		40.4	35.0	
9.8		8.3	24.5		9.9	19	0.0	34.0		9.0		45.5	20.6	M	9.5	39	1.3	44.7		9.3		51.9	39.6	
7.8		8.5	41.8	Sj	8.9		6.1	40.2	M	8.8		48.6	29.3	Sj	9.0		3.9	5.5		9.8	50	17.4	40.6	
9.7		11.6	47.3		9.4		8.8	13.0		9.0	30	6.1	29.3	K	9.8		27.5	5.4		9.5		42.0	19.4	
9.5		15.1	5.8		9.8		26.7	7.3		9.4		9.5	16.8		9.2		28.2	37.0		10		43.9	17.2	
9.0		33.4	38.4		9.6	20	2.3	6.4		8.5		23.6	28.2	K	9.8		33.7	15.9		9.2		55.7	6.1	
9.0		45.2	7.5	K	9.6		3.7	36.5		9.7		36.4	47.1		9.4		41.2	29.3		8.3		57.1	51.8	L
8.3		50.1	8.7	K	9.9		23.2	3.6		9.9		37.7	38.5		9.4		57.3	36.3		9.8	51	11.2	26.1	
9.5		56.3	55.6		8.8		25.5	26.7	M	9.3	31	24.3	51.2		9.3	40	23.7	44.9		9.5		24.5	30.1	
8.3		57.7	10.9	K	9.5		25.9	28.2		10		41.1	35.4		9.3		27.0	4.4	M	9.5		27.7	22.5	
9.8	11	3.4	31.2		9.4		32.8	52.0		9.0		48.2	55.5		6.1	41	2.9	13.8	L	9.1		45.6	7.7	
9.5		11.7	40.4		9.1		57.2	51.5		9.0		52.6	34.2	M	9.4		5.7	34.6		9.5		53.0	42.5	
9.4		14.4	2.9		9.4	21	3.9	54.7		9.5	32	0.0	18.0		9.2		6.8	12.2		9.5		59.9	40.7	
8.5		43.0	37.6	K	9.0		28.4	18.8	M	9.4		5.2	36.3		9.5		7.0	25.8		8.2	52	42.3	52.4	K
9.3		52.8	50.8	M	8.5		47.4	19.5	M	8.5		9.9	59.5	M	10		8.7	41.9		10		51.9	9.4	
9.5	12	20.0	51.8		9.5		50.1	43.1		9.3		15.2	49.3		9.5		9.5	50.2		9.7		51.9	49.4	
9.7		25.0	2.2		9.4		58.6	0.9		9.3		17.7	4.2		9.8		11.8	45.2		9.0		53.5	55.9	K
9.7		32.1	40.9		8.5	22	1.9	14.2	M	8.8	33	5.8	25.1	Sj	9.8		24.5	1.7		9.3	53	4.2	34.8	
9.6		36.5	1.2		9.3		5.9	21.7		9.2		25.9	45.5		9.4		34.8	36.7		7.5		17.6	10.5	M
9.0		41.5	33.1	M	9.5		21.9	17.8		9.5		32.8	15.7		8.8		37.9	20.6		9.5		29.5	59.0	

5201—5260				5261—5320				5321—5380				5381—5440				5441—5500			
	19h—20h	—11°			20h	—11°			20h	—11°			20h	—11°			20h	—11°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.1	53 29.6	13.7	M	9.2	5 22.1	11.2	K	9.3	16 13.6	33.9		9.5	31 2.7	36.4		9.5	43 26.9	10.0	
9.5	34.5	33.9		9.5	34.6	27.2		9.5	39.0	49.0		9.8	26.9	47.0		9.5	28.6	57.3	
9.7	46.8	49.6		9.5	34.8	31.0		8.5	42.0	57.8	K	9.7	43.4	4.6		9.8	31.1	39.2	
9.5	54 24.0	34.7		9.4	35.0	59.3		9.8	44.1	23.3		9.5	32 0.8	35.1		10	35.1	3.6	
9.5	26.1	10.5		9.8	55.6	21.9		8.9	57.3	39.6		9.8	15.5	26.4		9.6	42.6	23.5	
9.8	30.0	48.7		9.7	6 19.0	39.2		9.4	17 11.5	29.8		10	31.8	38.1		9.1	44 3.7	13.4	
8.5	37.7	57.8	K	9.8	24.6	20.5		8.9	28.1	47.9	K	9.5	53.6	15.0		7.2	4.9	58.9	Sj
9.6	55 16.0	15.7		9.2	44.5	18.3	K	9.2	32.7	10.9		9.5	33 4.6	19.3		9.0	8.6	57.5	
9.2	16.0	39.4		7.5	51.1	19.1	K	9.8	48.8	35.8		9.5	8.8	49.5		9.7	15.4	25.7	
10	28.1	22.3		9.8	56.5	32.9		9.0	18 12.0	53.4	Sj	10	22.5	23.9		9.5	56.6	33.8	
9.4	28.5	42.2		9.8	7 6.0	46.5		9.3	12.8	43.4		9.6	30.8	17.5		9.5	58.5	33.7	
10	30.2	35.0		9.1	7.2	15.6	K	8.3	20.7	42.5	Sj	9.5	32.2	17.5		10	45 15.6	50.7	
9.1	43.1	13.0		9.6	13.8	39.9		9.2	43.6	4.7	Sj	9.5	49.7	47.8		9.4	34.7	11.2	
9.5	51.6	4.0		9.1	23.5	36.0		9.2	19 7.6	11.5	M	7.5	49.8	27.5	K	9.1	45.6	39.8	
9.6	56 10.9	0.1		9.8	36.6	9.9		9.8	23.8	0.1		9.6	34 0.6	1.2		9.5	59.1	22.6	
10	24.3	48.7		10	36.6	12.3		9.5	38.2	4.1		9.8	9.5	23.6		7.2	46 9.2	28.3	K
8.6	57 6.2	8.3		9.8	51.5	38.9		9.8	20 8.0	16.0		9.5	10.0	45.1		10	16.1	24.6	
9.0	8.6	17.7		9.3	8 11.3	29.0		9.5	9.1	21.6		9.5	36.3	48.6		9.5	16.1	35.4	
9.5	14.4	21.6		9.8	19.9	59.8		8.7	10.6	24.0	K	9.5	38.5	23.4		9.4	19.6	28.9	
9.7	18.5	41.1		9.1	24.6	12.3	M	9.6	32.6	12.3		9.5	39.4	15.1		8.9	32.1	22.4	Sj
9.8	23.0	4.3		9.0	28.4	41.5	K	8.2	40.5	33.4	K	7.5	45.5	29.2	Sj	8.9	34.8	45.4	M
9.1	32.6	10.9		9.8	31.6	26.4		9.8	44.5	40.1		7.8	35 22.1	15.7	Sj	9.7	44.2	51.6	
9.4	38.1	6.9		9.2	48.1	23.5		8.5	47.8	41.6	Sj	9.9	42.1	7.2		8.0	47 29.1	52.0	Sj
9.7	50.4	56.0		9.5	52.5	42.9		9.0	21 15.6	24.4	B	9.1	48.0	23.2	M	9.8	35.7	39.6	
9.9	52.7	51.9		8.7	59.9	25.0	K	9.9	35.0	17.2		9.6	36 0.0	3.8		9.0	44.9	25.6	K
9.6	58 0.3	10.2		9.3	9 5.1	32.7		9.0	22 12.1	14.3	B	9.6	15.7	36.4		9.5	49.3	15.3	
9.5	20.9	26.8		9.3	13.9	58.1		8.5	18.5	34.8	K	9.7	17.0	33.9		9.8	50.0	3.5	
9.5	23.2	2.4		9.5	29.1	17.3		9.8	18.9	18.2		8.0	42.8	0.4	K	9.2	56.2	35.9	K
9.5	36.0	26.8		9.9	45.0	28.4		9.0	23 9.6	25.6	M	8.4	37 1.2	32.9	Sj	9.5	48 3.2	35.2	
8.9	42.5	3.2	M	7.7	10 7.0	2.7	B	9.5	10.2	8.8		9.8	3.0	51.8		9.3	3.7	20.0	M
8.5	59 8.7	6.9	M	9.6	10.6	18.0		8.8	11.1	50.4	Sj	10	16.7	26.2		9.5	23.2	41.2	
9.5	9.3	8.5		9.6	36.7	12.0		9.5	34.7	40.5		8.5	17.1	37.8	Sj	9.4	29.2	51.3	
9.8	28.1	11.2		9.9	43.4	49.0		10	44.7	36.5		9.9	21.5	52.7		9.5	38.8	20.4	
9.4	32.0	36.6		9.6	54.0	1.0		10	24 0.8	0.6		9.9	41.1	45.2		9.2	58.5	9.3	
9.5	33.9	45.5		7.8	11 8.2	14.9	K	9.4	3.1	33.7		9.1	47.0	54.4		9.7	49 2.2	58.5	
8.7	39.2	10.0	Sj	9.3	32.9	45.7	M	9.6	42.1	19.2		9.6	57.8	44.3		9.8	11.2	54.9	
9.5	48.8	48.7		9.4	34.9	4.1		9.7	42.8	46.2		8.5	38 9.6	32.9	Sj	9.4	53.2	5.6	
9.9	49.9	2.9		9.6	48.1	20.9		10	54.0	29.3		9.0	11.0	52.2		9.0	50 13.7	8.4	M
9.4	0 14.6	25.2		9.6	53.1	21.1		9.5	25 14.6	12.1		9.6	41.4	2.8		9.9	20.2	7.4	
9.5	32.5	29.1		8.9	12 2.0	35.4	K	10	18.5	38.5		8.3	43.2	14.6	L	9.6	25.6	39.3	
9.2	1 12.1	33.6		9.4	11.6	13.6		10	25.2	23.1		10	48.1	35.1		9.8	42.9	20.1	
9.8	29.8	56.2		9.3	12.0	42.1		9.7	29.1	22.6		9.4	39 34.0	55.7		9.4	50.7	20.5	
9.5	39.1	12.7		9.2	41.9	6.3		8.9	32.7	56.1	Sj	9.5	39.0	54.6		9.9	51 3.6	47.7	
9.9	47.1	43.9		9.0	56.1	10.9	Sj	9.4	26 30.1	10.8		9.8	47.4	41.1		8.7	20.7	16.5	K
8.8	2 8.8	46.5	M	6.5	13 3.5	26.5	K	8.7	34.3	46.5	K	9.6	58.0	56.3		9.1	27.7	15.8	
9.5	15.5	40.9		9.8	9.2	0.2		9.4	39.3	32.7		9.9	40 9.2	20.6		9.4	37.6	26.7	
9.7	17.9	35.5		9.0	13.8	22.2	K	9.3	39.6	56.0		9.3	16.7	7.9		9.4	45.2	14.7	
9.9	3 2.6	19.7		9.9	20.6	24.3		9.5	47.1	24.0		9.9	19.6	36.1		9.8	47.8	0.2	
8.8	12.5	35.1	Sj	8.7	30.0	33.9	K	9.3	49.6	24.0		9.4	36.1	4.6		9.2	52 0.7	28.5	
9.8	20.7	59.2		9.7	14 23.1	50.6		8.4	27 22.8	50.3	K	10	38.6	37.0		9.5	9.2	35.2	
9.6	22.0	11.6		9.5	28.0	31.5		9.8	41.6	43.4		9.6	43.8	5.7		7.1	16.2	11.1	K
10	4 2.4	45.5		9.6	56.2	0.5		9.5	48.6	7.7		9.0	52.5	44.8		8.0	26.4	34.2	K
9.6	5.7	55.7		8.8	15 15.1	20.8	K	9.8	28 1.3	41.4		9.3	41 21.5	0.7		9.0	38.7	35.5	K
7.6	9.1	8.7	B	9.3	18.7	44.5		10	3.1	14.6		7.8	29.0	59.3	Sj	9.1	44.8	50.0	
9.3	16.4	38.4	M	9.7	21.3	2.7		9.8	10.0	16.0		9.6	34.2	37.2		9.5	53 11.5	54.0	
8.7	19.2	45.5	M	9.3	27.1	19.5		8.9	44.6	8.0	B	9.7	42 31.4	4.2		9.2	12.4	30.3	
8.8	46.5	35.9	K	7.8	48.2	7.9	Sj	9.1	53.0	6.2	B	9.5	43 0.7	21.0		10	19.7	19.6	
7.7	48.7	16.6	K	9.5	16 3.5	7.6		8.9	29 20.8	34.5	K	9.9	1.5	9.5		8.9	28.2	18.7	L
8.8	49.9	0.3	Sj	9.0	6.6	28.2	K	7.0	30 0.1	31.8	K	9.7	7.3	2.4		9.4	47.6	59.3	
9.1	53.2	32.7		9.8	11.2	13.2		9.5	31.9	15.0		9.5	22.7	2.2		9.7	50.0	6.3	

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5501—5560

m	20h—21h m	s	—11° ′	
9.6	54	8.1	53.7	
8.5		37.7	44.8	L
9.5		43.8	14.5	
8.9		59.2	28.4	
9.5		59.2	41.0	
9.0	55	9.1	37.8	K
8.6		15.2	36.9	K
9.4		32.0	24.0	
9.0		57.1	44.5	K
10	56	8.4	14.8	
neb		17.0	56.3	B
9.8		29.6	38.0	
9.4		40.4	50.5	
9.7	57	5.7	7.9	
8.5		6.1	39.6	K
8.9		7.3	5.9	K
9.8		33.8	58.9	
9.8		35.8	46.3	
9.8		40.8	14.6	
10		42.2	18.7	
10		50.1	51.7	
9.1		50.7	37.3	
9.8		54.1	52.4	
8.2		58.7	11.1	Sj
9.1		58.9	49.8	
9.8	58	3.2	42.7	
9.4		26.2	20.7	
9.5		40.7	36.5	
9.4	59	21.1	56.3	
8.2		40.0	50.0	K
10	0	19.3	42.0	
9.5		59.2	35.5	
8.1	1	10.2	23.7	Sj
8.5		21.7	20.8	L
9.8		36.1	17.5	
9.8		36.9	49.1	
9.5		37.4	31.7	
5.2		41.2	57.6	B
9.2	2	18.1	39.1	
9.6		30.2	17.7	
9.3	3	1.1	38.8	
9.5	4	27.7	4.4	
9.3		30.2	27.8	
9.3		52.8	6.4	
9.2		54.5	14.6	Sj
9.6		55.2	37.5	
9.4	5	5.2	37.1	
9.8		44.4	59.5	
8.8		58.0	22.2	K
10		58.4	59.5	
9.8	6	1.3	54.1	
8.6		9.2	46.7	K
6.5		25.2	12.4	L
9.8		29.7	32.1	
9.7		43.2	1.3	
9.9	7	26.1	19.8	
9.3		36.3	3.1	M
9.5	8	0.6	22.9	R
9.5		43.2	36.8	
9.6		51.3	41.0	

5561—5620

m	21h m	s	—11° ′	
9.8	9	30.3	47.2	
9.8		41.4	57.4	
9.0	10	4.5	25.0	K
9.5		31.8	38.1	
9.5		38.2	37.3	
9.0		53.8	13.6	M
9.5		59.5	20.9	
9.3	11	29.6	18.1	M
9.2		33.7	34.6	
10		41.2	36.4	
9.8		51.2	32.8	
8.8	12	16.1	5.2	K
9.7		23.2	39.9	
8.6		24.5	24.8	K
9.9		29.3	48.5	
9.4		51.8	47.9	
9.3		55.1	41.8	M
8.0		57.5	57.7	K
9.5	13	16.8	31.6	
9.8	14	3.4	47.6	
9.5		18.7	7.9	
9.6		43.8	24.4	
8.7	15	18.2	50.5	K
8.3		20.8	12.4	B
10		24.5	56.2	
9.8		31.4	43.4	
9.0		55.0	18.8	B
9.1	16	24.7	14.0	K
9.0		44.7	34.6	B
9.9		54.4	49.1	
9.8		56.2	12.0	
9.5	17	2.3	7.8	
9.9		50.0	52.5	
9.0		51.0	8.9	M
9.9	18	1.3	21.5	
9.2		23.4	17.5	
9.6		35.7	44.7	
8.2		35.7	32.3	B
10		39.1	1.3	
10		52.4	38.4	
9.6	19	33.5	24.7	
8.4		39.2	47.3	B
9.5		49.2	4.1	
9.5		56.0	44.9	
9.9	20	15.3	53.2	
9.3	21	18.4	38.5	
9.8		56.5	24.0	
9.4		58.5	35.4	
9.1	22	3.6	51.9	
9.9		56.0	18.4	
9.6		57.9	49.2	
10	23	14.9	33.9	
9.4		32.1	28.4	
9.5		34.8	58.5	
9.7		57.6	40.7	
9.7		59.8	43.7	
9.8	24	2.1	46.7	
9.1		28.8	9.8	K
8.7		47.0	11.3	K
9.9	25	43.5	22.0	

5621—5680

m	21h m	s	—11° ′	
9.9	26	2.7	20.9	
9.5		18.0	6.8	
9.1		32.7	33.8	M
9.3	27	46.3	12.7	
9.8	28	2.0	2.7	
9.6		13.4	42.9	
9.6		25.3	15.1	
10	29	1.0	42.1	
9.8		16.8	56.4	
9.1		21.9	24.5	
9.3		39.1	4.2	
8.6		45.4	40.3	M
9.8	30	17.2	20.9	
9.0		20.1	5.5	R
9.0		21.0	33.1	L
9.2		28.3	10.9	
9.8		46.7	35.7	
10		51.0	29.2	
9.3	31	32.6	5.7	R
6.3		40.4	13.8	K
9.5		45.4	19.6	
9.4		56.4	52.3	
8.8	32	0.2	49.8	
9.1		16.5	59.0	K
8.5		21.7	27.3	Sj
9.6		34.2	24.7	
9.0		52.6	8.5	R
8.5	33	19.2	26.2	K
9.8		34.8	59.0	
10	34	21.4	11.0	
8.8		40.2	43.5	Sj
9.2	35	10.5	18.0	
8.7		45.6	47.8	K
9.2	36	6.9	42.2	M
9.8		8.2	36.3	
9.8		11.7	39.6	
8.5		30.3	26.5	M
9.8		54.1	59.9	
10	37	3.4	2.1	
9.7		13.3	2.1	
9.2		17.8	24.0	
9.9		43.0	43.2	
9.9	38	3.9	54.8	
9.4		20.7	50.8	
10		28.8	49.0	
10		36.8	59.7	
8.3		39.9	28.7	M
10		41.2	38.8	
9.7	39	33.8	50.0	
9.7		36.4	48.6	
9.2	40	5.9	56.8	
9.8		44.6	6.5	
9.0		44.8	38.0	
9.4		57.3	48.0	
9.4	41	2.4	51.8	
9.3		11.4	40.2	Sj
9.4	42	11.7	42.0	
9.8		38.2	3.3	
9.4		39.0	34.6	
9.7		40.7	4.8	

5681—5740

m	21h m	s	—11° ′	
9.0	42	57.9	25.7	
8.3	43	9.0	19.2	L
9.3		38.4	23.8	
9.3		59.7	42.9	
9.5	44	2.0	19.1	
10		7.0	10.2	
9.5		12.0	56.0	
9.8		50.7	4.0	
9.8		57.6	42.3	
6.8	45	15.0	14.3	K
9.5		36.0	46.1	
9.0	46	15.5	24.1	WC
9.3		20.1	48.8	
9.8		28.7	16.7	
10		32.7	25.1	
9.7		42.9	3.8	
10		50.4	56.4	
9.7		58.5	6.7	
10	47	9.3	45.2	
9.8		17.8	38.0	
9.3		28.1	22.4	M
9.8		33.0	28.0	
9.7		49.5	50.2	
9.0	48	9.0	7.2	M
9.0		13.6	56.2	R
9.4		14.7	1.7	
9.3		17.5	35.8	
9.8		27.8	4.1	
9.5		37.6	23.5	
10		37.6	56.3	
9.6	49	13.4	17.7	
9.4		19.4	19.0	
9.4		21.4	18.4	
9.8		22.7	49.9	
9.8		24.7	43.8	
9.5		39.0	40.0	
9.7		44.2	59.1	
10		52.8	3.6	
8.3	50	14.6	23.7	K
8.8		19.8	49.3	M
9.8		42.8	7.6	
9.3		48.3	34.5	
9.8	51	6.6	57.3	
8.2		14.6	58.3	R
9.5		18.1	31.2	
7.5		59.3	0.2	Sj
10	52	22.9	17.9	
9.8		28.2	36.3	
8.6		35.6	11.0	L
9.4		55.7	46.2	
9.3	53	21.4	52.3	
9.3		36.5	16.2	
9.1	54	5.2	9.2	
9.5		46.5	42.7	
9.1	55	1.2	21.6	WC
9.3		37.8	51.6	
9.3	56	11.3	18.6	
9.5		20.6	56.4	
9.5		25.8	44.1	
9.3		29.7	20.2	

5741—5800

m	21h—22h m	s	—11° ′	
9.4	56	49.3	35.4	
8.7		53.7	35.0	K
9.8	57	8.6	48.3	
9.7		53.9	48.6	
9.5	58	2.2	46.2	
9.5		8.8	26.5	
9.3		11.5	30.3	
9.9		29.7	4.9	
9.6		36.4	2.0	
10	59	5.0	52.0	
9.1		8.9	6.7	K
10		12.2	6.5	
9.5		14.3	40.7	
9.3		19.8	40.5	
9.7		32.4	42.0	
6.8		33.4	9.1	K
9.8		38.7	23.4	
9.9		59.1	26.1	
9.2	0	14.5	38.0	
9.1		24.8	37.5	
9.4		29.1	29.3	
9.5		41.8	21.9	
9.8	1	9.9	59.8	
9.8		19.2	49.0	
8.7		24.5	13.9	R
9.1	2	1.9	40.2	
9.5		14.2	45.7	M
9.5		29.0	25.0	
9.5		34.7	6.5	
6.5		48.0	31.7	K
8.9		48.9	46.2	M
9.1		50.3	11.8	
10	3	8.4	39.8	
9.5		19.9	6.0	
8.5		50.6	44.5	K
10	4	25.9	0.8	
7.3		33.1	46.7	Sj
8.3		55.8	8.5	K
9.6	5	7.1	37.5	
9.5		14.8	35.3	
9.0		25.3	53.5	R
9.1		43.7	28.1	
9.9		58.8	8.8	
9.8	6	29.3	56.6	
8.9		50.3	59.3	K
9.5	7	29.9	31.5	
9.4		35.5	43.6	
10		38.9	18.4	
9.5	8	21.9	3.1	
9.2		45.0	29.2	
9.0		59.0	54.6	K
8.7	9	0.1	14.7	L
9.2		4.1	9.0	
9.5		20.7	21.6	
9.8		23.9	24.5	
9.5		32.0	20.2	
9.0		40.1	59.5	R
9.2		55.3	30.1	
10	10	9.1	59.4	
10		10.3	4.8	

5801—5860					5861—5920					5921—5980					5981—6040					6041—6100				
22h			−11°		22h			−11°		22h			−11°		22h—23h			−11°		23h			−11°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.8	10	11.5	24.2		9.4	25	38.2	40.8		9.4	40	43.8	28.9		8.8	54	58.9	1.1	M	10	9	16.3	38.9	
10		17.6	50.9		9.5		39.0	4.0		9.6		44.4	8.5		10	55	9.6	53.6		8.3		32.3	9.5	K
9.3		35.1	12.4		9.5		39.1	38.8		6.3		52.5	19.1	K	9.8		12.9	23.7		9.4	10	22.2	35.1	
9.8	11	2.0	58.6		8.3	26	1.3	15.8	Sj	9.7		56.4	2.6		9.1		34.2	48.2	M	9.5		42.7	23.3	
9.4		15.4	18.5		9.5		7.1	6.0		10	41	9.7	34.7		9.4		36.7	50.8		9.5		45.4	59.8	
9.1		33.4	31.2		9.5		31.6	27.1		10		16.9	13.5		9.4		39.7	0.3		9.4		53.3	34.0	
8.8		35.1	31.0	K	9.1		42.2	0.2	M	9.8		39.5	37.6		9.4		40.5	5.7		10	11	31.0	40.9	
9.5		54.2	17.0		9.8		55.9	55.2		10		44.1	30.0		10		42.0	14.3		9.6	12	7.1	35.1	
9.9	12	6.5	20.7		9.6	27	2.7	41.6		10		54.0	26.3		10		57.1	20.9		9.9		13.8	30.5	
9.3		27.8	40.2		9.4		19.2	31.3		8.7		58.8	44.6		9.5	56	27.0	5.4		9.8		25.6	15.5	
9.5		56.1	42.1		9.0		25.6	58.5		8.9	42	7.9	49.9	K	9.7		34.6	41.2		8.8		54.4	36.7	K
9.6	13	13.6	13.8		9.5		28.1	26.5		8.9		28.9	2.2	R	10		39.9	3.9		9.5	13	19.0	40.4	
10		47.6	23.4		9.8		45.0	31.6		8.2		29.6	10.4	K	9.5		53.1	17.7		7.8		19.7	19.5	K
9.4		50.2	53.1		10	28	6.2	38.8		10		47.3	4.0		10	57	1.9	44.8		8.6	14	11.3	39.7	K
9.3	14	5.2	56.6	Sj	8.6		59.8	2.3	K	10		51.8	33.8		10		40.5	8.1		9.2		23.0	37.6	
9.5		13.3	35.9		9.2	29	7.4	47.5		9.3	43	23.9	15.2		8.0	58	14.7	40.3	K	9.5		24.8	59.0	
7.8		29.3	34.4	K	9.8		18.1	30.3		9.0		45.2	53.8		7.3		18.5	13.3	K	9.8		27.7	23.1	
8.7	15	6.6	58.0	Sj	9.2		19.0	47.2		9.0		54.3	21.8		9.1		27.5	9.5	M	9.5		29.2	36.0	
9.5		22.2	50.2		9.8		28.1	13.0		9.4	44	1.7	27.3		9.1		44.4	12.4		9.3		49.6	8.7	
9.5		51.9	55.3		8.6		35.4	1.2	K	8.5		33.0	43.4	K	10	59	6.0	6.3		10	15	3.5	37.6	
8.3	16	14.0	37.1	K	9.4		41.7	3.7		8.9	45	22.7	12.1	K	9.5		14.3	46.8		9.5		6.2	16.9	
8.4		24.9	54.7	K	10		54.6	57.7		9.9		27.4	36.7		9.4		45.2	50.3		9.4		12.9	37.0	
8.0		49.7	53.4	Sj	10		55.2	23.7		9.1		32.6	26.8		9.5	0	24.9	38.2		9.7		21.1	57.5	
9.2		53.5	0.3		9.6	30	12.5	42.0		8.8		36.6	48.6	K	9.6		46.3	53.7		8.0		28.9	34.0	K
9.4	17	12.8	38.6		9.4		32.5	51.1		9.7		37.2	59.4		10		48.1	15.1		9.1	16	1.4	36.5	
9.1		37.7	55.2	Sj	9.9		52.6	44.4		8.2	46	53.1	4.5	K	9.5	1	4.2	40.1		9.7		5.8	55.2	
9.5		39.4	1.1		10		57.2	44.0		9.6	47	18.2	0.5		9.6		9.4	27.5		9.4		23.7	12.2	
9.5		43.4	1.0		9.9		58.8	35.4		9.3		19.4	17.0		9.5		18.3	16.8		9.8		36.6	4.9	
9.0		54.5	54.3		9.1	31	24.1	44.9		9.5		44.1	18.2		9.5		23.8	6.8		9.8	17	10.6	43.5	
9.6	18	8.6	7.6		10		52.7	48.1		9.6	48	13.9	58.2		10		24.6	24.2		9.2		18.1	39.4	
9.7		14.0	42.6		9.4	33	8.3	2.9		10		14.1	23.9		8.7		33.0	28.5	Sj	8.3	18	15.4	57.3	K
9.5		46.6	14.8		9.1		22.4	11.0		8.7		28.8	50.3	Sj	9.5		41.9	30.9		9.5		20.5	47.9	
7.0		59.5	57.7	K	9.5		23.7	13.9		8.1	49	13.5	2.1	K	9.3		49.3	7.9		9.5		27.9	24.7	
8.5	19	7.3	22.2	Sj	9.5		52.7	11.2		8.8		15.7	10.5	K	8.8		57.5	58.0		8.5		47.0	28.5	M
9.0		34.9	35.0		9.8		55.8	50.4		9.6		31.8	18.2		8.0	2	22.6	18.3	K	9.3	19	12.3	12.4	
9.2	20	11.2	4.7		9.4	34	17.0	22.8		9.9		32.4	14.6		10	3	0.4	12.7		8.2		13.5	49.7	K
9.8		49.5	21.7		9.5		26.2	5.9		10		32.9	21.8		9.4		16.6	12.4		9.0		22.1	44.0	K
9.8		55.5	1.1		9.7		38.3	1.2		9.8		37.0	58.6		10		18.9	13.3		9.7		47.4	10.2	
9.0	21	12.2	38.0		9.0		44.1	7.4	M	9.8	50	7.4	38.7		9.4		27.6	47.1		10	20	24.9	50.2	
10		20.8	58.4		9.3	35	3.9	0.3	R	9.8		9.1	29.9		9.3		30.0	27.4		9.2		40.3	7.7	
9.9		49.5	2.4		9.3		6.8	54.5		8.7		30.1	54.3	K	8.6		55.9	18.1	K	10	21	0.8	5.1	
8.7	22	20.8	56.5	Sj	9.7		17.2	42.0		9.7		42.2	39.2		9.9	4	12.6	53.9		9.5		6.1	26.9	
9.6		27.5	31.8		9.4		23.5	24.4		9.2		45.5	2.4	M	9.0	5	3.5	7.5	K	9.1		17.3	58.6	
9.0		34.7	21.5		9.5		40.3	32.9		8.5	51	22.0	47.2	K	9.4		43.5	40.4		9.4		46.5	16.3	
10		35.5	14.1		9.0		54.2	20.1		8.9		23.1	29.1		9.0	6	2.8	24.0	Sj	9.8		56.2	42.9	
9.5		41.8	15.5		9.3	36	5.5	52.3		9.7		33.9	32.1		9.9		5.5	22.7		9.0	22	11.6	33.9	
9.1		43.3	46.8		9.0		43.3	16.1		9.4	52	0.6	23.2		8.0		8.4	6.2	K	9.6		16.9	11.5	
9.5		56.7	0.0		9.7		45.2	40.6		8.4		11.8	39.5	K	9.5		18.6	16.7		8.5		44.4	14.9	K
10		57.8	9.9		8.9	37	26.6	15.6		9.8		23.0	51.8		9.1		24.4	45.9		9.5	23	58.5	1.9	
4.8		59.0	25.5	Sj	9.5	38	12.5	9.7		9.8		26.7	48.8		9.1		25.3	17.2	K	8.6	24	18.6	40.2	Sj
8.4	23	11.6	21.8	K	9.3		23.9	17.6		9.7		29.0	33.1		8.5		57.0	14.7	K	9.6		22.4	58.2	
8.5		25.4	20.9	K	7.2		35.1	55.5	K	8.5		32.2	44.4	K	6.3	7	7.3	28.5	K	8.6		25.3	47.6	K
9.0		28.4	45.6		10		41.5	21.1		9.5	53	15.2	15.8		8.9		36.1	43.1		9.8		37.5	15.8	
9.1		29.6	51.4	M	9.6	39	7.2	59.0		9.3		15.5	39.4		9.4		59.3	37.4		9.0		43.9	11.7	
6.8	24	0.4	38.9	K	9.8		20.1	17.7		9.8		17.7	47.0		9.1	8	9.7	35.6		9.2		47.8	50.5	
9.6		9.8	37.2		10		21.4	9.6		9.4		39.4	18.1		8.8		12.4	50.0	K	9.1		50.9	57.9	K
9.0		42.9	32.1	K	9.8		25.9	18.9		9.3		43.4	20.3		9.7		20.6	21.5		9.8		53.9	1.8	
8.5		46.0	41.1	K	10		27.9	54.0		9.2		47.3	56.0	K	8.8		21.5	9.3	Sj	7.0		54.8	47.8	K
9.8		50.7	14.0		9.5	40	10.2	39.8		9.4	54	12.6	45.6		9.5		53.2	34.7		9.3	25	38.9	3.7	
9.8	25	22.9	53.6		9.7		43.6	58.5		10		41.0	25.8		8.0		54.2	0.1	K	10	26	8.1	20.0	

6064: 28:65 34′6:6 B_4, Ep. 1871.99

6101—6120

	23h		−11°	
m	m	s	′	
9.7	26	48.9	1.8	
9.5		56.2	31.5	
9.5		58.0	8.9	
9.2	27	10.6	38.4	
9.0		13.8	10.2	
8.9		19.7	23.0	K
9.1		20.6	24.0	K
9.3		27.7	23.4	
9.8		40.0	47.8	
7.3		57.1	21.4	K
8.0	28	27.3	29.2	K
9.0		30.2	30.3	K
9.6		59.6	39.2	
9.7	29	20.3	31.7	
10		26.9	53.2	
9.1		57.1	7.8	
9.4	31	3.8	58.1	
9.3		18.4	44.8	
9.4		29.2	17.9	
10		33.3	30.2	

6121—6140

	23h		−11°	
m	m	s	′	
9.0	32	25.9	43.9	K
9.6		29.7	15.0	
10		37.2	4.7	
9.6		47.4	2.6	
8.8		59.5	1.7	Sj
10	33	24.5	47.1	
9.8		58.4	44.7	
9.8	34	37.5	15.1	
9.5	35	12.0	58.1	
9.4	36	5.6	7.7	
8.9		6.2	9.8	K
8.9		46.1	47.3	
9.9		56.7	20.8	
9.4	38	21.7	8.8	
8.3		30.3	19.9	
9.9		54.4	36.2	
9.5	39	11.3	32.5	
9.6		56.6	48.6	
8.8	40	21.4	22.3	
9.5		29.2	58.5	

6141—6160

	23h		−11°	
m	m	s	′	
9.2	40	45.6	5.7	
9.3	41	5.6	5.5	
9.3		18.6	46.3	
9.9		27.2	53.4	
9.5	42	34.7	35.5	
6.8		38.8	54.5	K
9.5		50.2	3.9	
9.1	43	0.6	56.8	
9.5	44	16.4	8.6	
9.1		34.9	22.4	
9.0	45	0.0	39.3	
8.8		27.1	37.8	K
9.4		39.0	2.2	
7.8		44.8	49.5	K
9.4		48.5	1.2	
10	46	19.7	41.9	
9.8		29.7	38.8	
9.7		57.8	49.8	
9.7	47	30.8	48.3	
9.3	48	10.1	40.1	

6161—6180

	23h		−11°	
m	m	s	′	
8.3	48	11.0	35.9	K
9.2		15.9	48.1	
9.4		23.1	39.8	
8.7		29.1	40.5	K
10		54.7	52.6	
9.9	49	17.9	50.1	
9.3		55.8	37.2	
9.6	50	40.0	52.9	
9.4		58.1	9.9	
9.8	51	42.6	49.2	
10	52	25.7	21.8	
10		34.1	8.6	
9.6		34.6	53.8	
9.9		46.0	30.2	
7.8		56.7	16.4	Sj
9.8	53	27.7	16.0	
9.0		33.7	44.7	K
9.3		43.9	36.5	
9.4		48.8	23.9	
9.1	54	21.2	18.2	

6181—6200

	23h		−11°	
m	m	s	′	
9.5	54	22.4	54.1	
9.6		39.3	31.6	
9.5		52.3	31.2	
9.5		52.9	7.3	
9.0	55	7.8	31.3	
9.1		16.2	7.2	
9.8		32.6	1.0	
9.1		50.4	48.0	K
9.2		54.0	34.9	
9.5		59.8	13.2	
9.3	56	35.4	42.4	
9.8		37.5	37.3	
8.8	57	2.2	59.9	K
5.5		4.4	18.8	K
10		48.5	34.3	
9.9		50.4	48.4	
10		51.8	18.0	
9.9	58	1.2	52.0	
8.0		51.0	35.1	K
10		54.2	49.2	

6201—6203

	23h		−11°
m	m	s	′
9.2	59	12.6	50.0
10		38.1	32.4
9.7		38.8	31.6

6204—6206

	23h		−11°	
m	m	s	′	
9.5	59	56.5	45.6	
8.7		58.2	50.1	K
9.8		59.2	45.2	

Zone —12°

1—40					41—80					81—120					121—160					161—200				
	0h		—12°			0h		—12°			0h		—12°			0h		—12°			0h		—12°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.9	0	5.5	33.1		9.7	11	34.0	32.7		9.3	23	16.4	13.0		7.0	34	54.8	35.9	Sj	9.2	47	53.7	59.3	
9.1		53.9	12.1		9.6	12	38.0	27.3		10		25.4	31.3		8.9	35	4.4	56.9		6.0	48	45.4	3.2	K
9.5	1	5.0	17.9		9.5		39.7	8.1		8.0		59.5	1.5		9.3		30.5	30.8		9.0		50.2	19.1	K
9.6		6.6	52.5		9.5		59.8	38.5		8.4	24	10.1	4.4		9.1	36	3.2	52.8		9.5	49	8.8	48.0	
9.8		16.4	22.8		9.6	13	16.8	15.5		10		18.2	26.5		9.1		10.9	42.0	K	9.8		34.8	21.8	
9.9		24.1	59.4		9.4		28.0	52.6		10		41.3	6.8		6.0		32.0	48.0	K	9.2		37.5	8.6	
10		25.0	49.1		10		35.0	34.5		9.2		41.4	15.8		9.6	37	38.7	54.5		9.1	50	16.6	16.1	
8.8	2	3.6	50.8	K	9.5		40.3	7.2		9.6		48.2	6.0		7.8		42.3	56.5	Sj	9.4		29.1	10.1	R
10		53.6	33.5		9.4	14	16.4	39.0		10	25	6.9	55.7		10	38	27.2	31.5		9.5		44.0	7.2	
8.3		58.6	35.3	Sj	8.5		37.9	49.1	K	9.5		12.7	52.6		9.5		43.3	32.1		8.7	51	9.6	50.1	K
9.7	3	59.8	44.2		9.3	15	29.3	30.0		9.1		14.2	37.6		10		44.8	36.5		10		18.5	52.9	
9.4	4	5.8	32.4		9.5		37.3	53.7		10		51.5	8.6		7.3		56.3	14.2	L	9.7		20.2	38.6	
9.5		12.5	10.5		9.0		50.8	6.6		9.7	26	3.3	38.0		10	39	41.5	39.1		6.5		28.1	9.4	K
8.3	5	9.1	29.9	K	10	16	9.2	45.7		8.5	27	3.8	5.2	K	9.9		46.4	40.2		10		34.1	26.1	
9.5		11.9	55.9		9.6		26.5	39.6		10		44.2	45.0		9.5		48.9	55.7		10	52	9.2	36.4	
10		39.7	54.9		9.2	17	14.4	38.3		9.5		54.2	24.5		10	40	58.5	20.8		9.1		11.5	40.1	K
9.9		51.5	9.1		9.7		18.0	56.4		9.7	28	8.6	15.0		10	41	4.9	10.7		9.2		24.0	43.4	
9.2		55.5	39.0		9.8		20.4	15.3		9.3		14.1	37.4		10		23.4	9.2		9.4		27.7	13.1	
9.8	6	0.4	28.7		7.8		28.9	30.9	K	8.8	29	1.5	5.6		9.5		24.8	5.0		9.0		58.7	48.1	K
8.3		38.0	6.8	Sj	9.0		33.6	46.5		8.8		30.4	28.0		9.5		25.3	9.3		9.7	53	1.7	9.6	
8.8		39.6	20.0		9.4	18	24.5	43.0		9.3		48.7	12.7		10	42	3.1	50.3		10		3.4	55.5	
9.9		41.9	16.8		9.9		42.2	55.9		9.4		51.2	5.6		9.0		7.0	33.0		9.4		3.4	19.5	
10	7	1.7	9.5		8.5		46.5	11.0	Sj	9.2		53.5	26.3		9.0		19.5	59.8		8.1		15.3	58.5	K
9.7		1.8	56.2		10	19	31.7	53.4		9.3	30	17.1	0.4		10		23.7	26.2		9.5		30.3	35.5	
10		25.9	40.3		9.6		33.5	20.5		9.5		18.9	34.3		9.4		24.5	28.8		9.2		49.1	11.0	
9.8		38.0	59.1		9.7		53.6	24.0		9.3		24.5	52.6		10		53.1	46.7		9.5	54	2.5	26.2	
9.1		51.7	21.8		9.5		55.6	47.1		9.7	31	5.0	56.1		9.5	43	0.5	20.7		10		26.5	48.5	
8.1	8	25.7	47.9	K	9.4		57.0	51.9		9.6		9.8	42.1		9.3		43.8	10.8		9.4		30.6	55.1	
9.1		36.3	53.0		9.1	20	13.2	49.8		8.8		13.5	58.3	K	9.4		58.4	9.3		9.4		41.0	20.8	
9.5		53.9	55.7		9.3		25.7	23.0		9.4		32.9	35.0		9.5	44	17.3	57.1		8.6		51.5	2.2	Sj
9.6	9	15.0	57.2		9.4		38.3	31.8		9.6		47.4	25.4		10		20.8	25.4		10		54.3	35.9	
9.7		24.1	3.2		6.7		39.1	27.2	L	9.6		47.4	15.7		9.3		24.5	18.0		10	55	9.6	55.1	
9.4		25.4	55.9		10		50.1	0.1		9.3		54.0	16.8		9.3		35.0	36.6		9.4		45.5	1.7	
8.3		43.4	51.2	Sj	9.1		51.2	5.7		9.0		55.8	35.7		8.9		56.8	39.5	K	9.3	56	13.4	57.0	
8.5	10	18.1	0.9	K	6.7	21	10.7	2.4	K	9.5	32	0.0	56.2		9.5	45	10.7	22.2		9.7		31.5	42.2	
10		35.8	24.1		9.3		48.7	51.2		9.5		6.6	55.8		9.4		44.0	55.8		8.2		33.3	26.8	K
9.5	11	17.3	28.2		7.8		49.1	24.0	K	8.5	33	27.2	9.9	K	9.2	46	16.8	39.2	K	9.5		54.2	24.8	
9.1		29.1	14.6		10	22	0.4	40.2		10		35.6	59.4		10		55.5	1.9		10	57	34.5	42.1	
10		30.0	59.5		10		10.2	21.7		9.2	34	42.5	27.2		9.5	47	16.2	42.1		10		38.7	55.6	
8.3		33.3	23.6		9.4		10.6	18.1		9.2		45.1	52.3		9.5		21.3	48.4		9.5		54.5	41.6	

201—260

m	0h—1h m	s	—12° ′	
9.1	58	11.7	12.4	
10		19.2	22.4	
9.5		41.8	2.3	
9.5	59	56.8	57.2	
9.3	0	14.8	52.3	
10		44.4	31.8	
9.8		47.8	16.5	
10		48.1	43.4	
7.8		56.5	56.7	K
8.5	1	48.0	52.2	K
10	2	6.4	25.5	
9.1		9.3	53.5	K
7.5		22.5	27.0	L
9.4	3	9.9	25.2	
10		19.9	10.9	
8.3		32.5	47.7	K
8.1		47.4	9.5	K
9.5	4	17.9	14.9	
10		24.3	12.2	
9.0		40.3	29.4	
9.7		43.8	41.3	
9.1	5	7.1	50.0	
10		12.7	36.7	
9.3		20.6	53.8	
10		56.9	45.7	
8.3	6	28.2	42.0	K
8.4		50.9	36.3	
9.9	7	7.0	40.5	
9.8		39.0	48.7	
8.9	8	34.6	18.4	
9.6		51.5	12.2	
9.3		59.8	57.1	
7.5	9	10.9	51.7	K
9.4		25.1	32.0	
9.1		35.7	44.2	
9.0		55.6	12.5	
9.1	10	24.5	52.7	
8.5	11	4.7	17.5	K
9.7		15.1	19.7	
9.2	12	21.9	50.6	
9.5		45.2	23.7	
9.5		55.2	22.8	
7.8	13	19.0	13.2	L
10		21.4	49.5	
9.0		29.3	32.6	
9.4		35.5	20.4	
8.5	14	23.2	20.6	
9.4		27.4	47.1	
9.5	15	21.3	39.7	
9.1	16	8.2	16.5	
8.9		18.4	27.9	
8.6		37.8	9.6	K
9.2	18	3.9	13.6	
8.9		10.6	54.0	K
8.8		10.6	20.8	
10		27.1	59.4	
10		44.3	48.2	
9.4		47.1	21.0	
8.8	19	2.4	58.4	K
9.0		28.4	24.1	

261—320

m	1h m	s	—12° ′	
9.4	19	43.4	24.5	
9.5	20	14.9	1.0	
9.5		18.2	53.0	
9.1		35.8	42.5	
7.3	21	6.2	59.6	K
10		7.9	9.8	
7.7		26.0	16.5	K
8.9	22	2.0	22.3	
10		4.8	57.5	
9.5		11.5	14.9	
9.5		21.5	4.9	
9.8		27.5	1.8	
9.8		46.9	29.8	
10		59.7	52.1	
9.5	23	19.5	6.1	
9.4		30.4	9.0	
9.5		32.0	31.9	
9.6		46.6	43.3	
9.4	24	17.6	27.8	
9.8		21.1	30.9	
9.0		51.6	26.4	
9.6	25	40.5	20.3	
10		50.6	22.9	
10	26	13.4	49.8	
9.3		16.4	30.0	
8.5		33.5	57.6	K
9.1		36.1	20.3	
9.1		40.7	36.8	
9.5		45.5	58.5	
10		56.1	6.9	
9.9	27	30.2	3.4	
8.5		51.4	49.8	K
9.0	28	20.8	35.8	
8.8		27.3	41.0	
9.5		34.1	15.2	
9.3		37.9	6.8	
9.2		38.1	27.0	
10	30	18.8	53.6	
9.7		33.1	2.7	
10	31	39.5	26.4	
9.2		44.1	49.3	
9.3		54.7	16.2	
10	32	10.6	44.1	
8.4		11.5	46.6	K
9.1		59.7	52.4	K
9.0		59.8	12.4	R
8.8	33	5.3	35.2	K
9.5		13.2	7.0	
9.0		14.8	2.7	
9.3		28.3	19.5	
9.0		34.8	17.5	K
9.6		43.5	57.6	
9.0	34	11.8	52.9	
9.5		30.3	26.3	
5.8		34.8	2.4	K
9.8		40.1	39.8	
9.8	35	2.3	2.1	
9.1		39.4	15.6	
9.0		41.1	53.7	K
9.4		54.7	25.3	

321—380

m	1h m	s	—12° ′	
8.5	36	23.4	8.4	K
7.3	37	16.4	1.5	K
8.5		31.5	23.4	L
9.1		32.3	0.1	K
8.5		32.7	14.0	L
9.0	38	13.5	58.8	K
9.4		40.9	2.9	
9.5	39	2.0	20.7	
9.1		4.3	46.3	
9.6		20.8	27.6	
9.2		43.4	52.9	
9.5	40	42.1	23.5	
10		52.8	38.9	
9.8	41	15.1	59.9	
9.0		23.2	31.3	
9.8	42	12.2	32.9	
9.4		23.2	30.5	
9.9		29.7	59.6	
10		30.3	51.8	
9.0		38.9	38.0	
9.1		53.5	49.4	
9.4		55.1	1.7	
8.5	43	20.0	51.5	K
9.8		43.2	56.4	
9.2		53.1	21.4	
8.8	45	9.6	30.9	
10		30.6	13.2	
10	47	1.3	58.8	
7.8		8.2	20.6	K
8.0		14.0	34.1	L
10		45.2	56.7	
8.3		47.7	13.4	K
9.6	48	34.8	22.5	
9.6		51.5	14.9	
9.1	49	0.1	44.7	K
9.7		10.7	45.0	
9.7		29.4	57.5	
8.8		50.9	56.4	K
9.1		52.8	23.0	
9.8		54.8	30.9	
9.3	50	23.3	54.1	
9.9		26.7	30.2	
9.3		40.4	57.2	
8.6		50.1	40.1	K
8.2	51	25.7	44.8	K
8.9		27.8	4.4	K
6.3		39.3	0.2	K
8.1	52	12.7	36.1	L
9.6	53	6.0	57.6	
9.7		30.7	17.8	
10	54	28.6	27.4	
8.5		44.6	42.6	K
7.8		48.9	31.2	K
9.3		50.5	40.1	
9.2	55	27.2	35.7	
9.4		42.0	23.0	
9.5		49.0	55.0	
9.2	56	16.1	12.5	
9.5		28.6	25.0	
10		31.3	21.7	

381—440

m	1h—2h m	s	—12° ′	
8.5	57	3.1	59.9	K
6.4		7.3	33.0	K
9.1		10.4	0.3	
9.5		17.5	15.0	
9.3		18.4	47.5	
9.6		45.5	15.1	
9.2	58	30.0	19.5	
9.1	59	18.4	45.3	K
10		44.3	30.5	
10	0	1.0	48.1	
9.4		5.6	13.6	
9.1		6.2	16.8	
8.2		7.1	22.6	L
9.2		23.8	17.0	
8.3	1	4.9	34.4	L
10		31.0	44.0	
9.5		52.7	18.1	
10		57.2	56.4	
10	2	6.6	10.7	
9.6		39.5	39.0	
9.8		53.7	26.4	
9.3		59.5	43.9	
8.8	3	29.4	16.5	K
9.1		43.6	12.6	
9.6		55.2	0.9	
9.7	4	4.1	41.8	
10		41.9	57.8	
9.9	5	46.3	56.2	
10	6	3.7	29.2	
10		19.0	28.6	
9.8		32.2	19.5	
9.6		48.5	28.6	
9.2	7	5.0	22.6	
9.8		5.3	32.7	
9.8		25.7	15.0	
10		26.6	32.6	
9.4		30.8	20.2	
7.5	8	10.0	43.5	K
9.2		19.4	53.2	
9.4		30.8	17.1	
8.9		38.9	22.6	
9.3	9	3.0	52.4	
9.1		29.4	33.4	
9.3	10	21.9	50.7	
9.4		32.2	37.0	
9.9		58.6	12.5	
9.9	11	4.9	45.7	
9.9		11.7	29.8	
9.4		19.9	43.8	
9.8		21.3	30.7	
9.3	12	18.8	34.6	
9.5		55.9	3.3	
9.8	13	3.5	51.0	
9.5		4.6	52.8	
9.7		6.1	26.9	
7.5		41.4	16.5	K
9.4		48.7	59.2	
9.9		57.1	54.3	
8.9	14	14.6	51.9	K
9.8		16.7	58.0	

441—500

m	2h m	s	—12° ′	
8.1	14	17.4	1.4	L
8.5		44.9	35.1	K
9.8	15	24.5	33.9	
9.8		26.2	40.3	
9.8	16	3.3	24.2	
9.5	17	36.6	22.9	
9.4		37.0	36.6	
8.8		37.4	29.2	
9.6	18	13.8	14.0	
9.5		33.1	27.1	
4.7		56.8	56.7	K
9.2	19	9.3	31.1	
9.0		40.3	31.6	K
9.0	20	23.7	42.0	K
9.6		42.2	21.7	
8.4		45.1	37.7	K
8.0	21	18.2	22.0	
9.6		31.9	56.5	
9.5	22	4.7	7.9	
9.5		13.8	49.9	
9.0		17.7	42.8	
8.5		22.7	37.2	
9.2		23.9	3.4	
8.9		51.9	14.2	K
10	23	1.2	3.1	
10		6.0	12.3	
9.0		7.1	53.5	
9.5		18.3	39.0	
8.2		50.5	52.0	K
9.8	24	13.5	24.5	
9.0		15.7	37.4	
9.4		40.9	48.8	
9.9		42.6	29.6	
9.5		45.3	18.5	
9.5		55.8	43.0	
9.8	25	32.2	38.1	
9.4		37.4	47.0	
7.5		48.1	3.5	K
9.0	26	1.5	47.2	K
9.0		5.4	39.6	K
7.0		56.6	57.9	K
9.5	27	3.0	54.1	
9.7		30.3	18.1	
9.7		40.4	34.3	
9.6		59.9	22.6	
9.2	28	38.7	33.8	K
9.5		43.6	0.7	
8.3		46.4	39.8	K
9.0	29	25.2	53.4	
9.4		41.9	22.5	
9.6		56.6	26.8	
9.0	30	10.7	56.0	K
9.2		14.6	34.3	
10		55.7	56.0	
9.1		56.5	22.5	K
8.4	31	8.2	1.1	K
9.1		25.4	17.0	K
10		38.5	39.8	
9.1	32	10.8	10.0	
8.2		16.6	22.1	K

501—560					561—620					621—680					681—740					741—800				
	2h		−12°			2h—3h		−12°			3h		−12°			3h		−12°			3h—4h		−12°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
4.7	32	32.9	29.4	K	10	50	2.3	11.8		9.3	7	50.4	44.6		7.8	31	17.3	43.2	K	9.8	46	30.6	45.5	
9.3	33	5.3	54.4		9.9		4.6	33.6		9.4	8	24.4	41.6		9.8		35.5	42.8		10		30.6	15.6	
9.1		18.7	47.7	K	9.5		31.8	42.5		9.4		37.6	52.3		9.5	32	20.0	17.7		9.2		39.1	53.5	
9.0		36.8	3.5		8.5		40.5	19.9	K	9.5		46.3	34.6		9.4		23.8	22.2		7.5	47	11.6	53.1	K
9.2		47.2	28.5		9.2	51	3.5	46.9		9.2	9	4.0	27.2		9.6		37.7	48.6		9.7		31.3	32.2	
9.2	34	24.0	12.7		6.6		15.9	35.5	B	9.7		9.2	33.9		8.8		59.8	9.0		8.5		57.6	14.5	K
10		27.4	31.9		9.2		25.3	41.6		7.2		20.8	31.5	Sj	8.7	33	14.8	32.2		10	48	0.9	0.7	
9.9		28.4	27.6		10		29.0	10.2		10		24.6	32.7		9.1		36.9	10.8		9.3		12.6	5.9	
9.3		54.8	4.8		10		35.9	56.7		9.8		54.2	53.8		6.8	34	21.2	16.1	Sj	9.7		15.2	20.8	
8.9	35	17.3	51.1	K	9.7		36.3	2.4		9.5	10	23.9	28.2		9.5		35.2	18.3		10		20.4	52.9	
9.0		27.5	55.9	K	9.7		57.5	33.9		9.5		36.7	54.5		9.5		38.7	59.1		9.8		21.4	2.5	
9.0		56.3	47.2	K	9.8	52	16.6	54.9		8.5		52.5	45.4		9.8		39.0	29.1		6.1		26.7	31.6	K
9.3	36	11.1	37.6		10		47.6	55.2		9.0		54.3	23.5		10		53.4	11.4		9.5		42.9	48.0	
9.9		15.9	59.2		9.3		56.0	24.4		9.0	12	11.2	56.0		9.0	35	9.7	48.5		9.4	49	18.2	13.3	
8.4		44.6	30.7	K	9.4	53	9.5	19.2		9.1	13	17.5	36.9		9.9		16.4	34.9		10		56.9	0.2	
9.2		53.2	18.8		7.5		21.8	2.2	K	9.9	14	20.8	31.4		10		28.8	49.5		8.9	50	56.3	19.4	K
8.8	37	37.4	6.8	K	9.5		28.1	50.8		9.5		26.0	21.8		9.8	36	17.4	54.8		9.6	51	9.1	34.2	
9.4		45.5	56.4		9.8		44.0	17.2		9.5		30.3	27.6		8.5		29.9	10.5		9.9		10.8	25.5	
8.3	38	14.9	46.6	K	9.0	55	3.7	53.0		9.8		36.7	55.2		9.5		32.3	1.6		9.7		18.2	21.4	
9.5		18.8	44.1		9.7		21.9	6.5		8.0	15	5.8	51.0	K	9.2		41.0	26.8		9.3		24.7	57.1	
9.1		41.3	39.6		8.5		35.3	59.6	K	8.3		41.7	13.4	K	9.1	37	27.7	48.0		10		26.0	48.9	
9.5	39	48.1	8.8		9.8		53.3	29.6		9.5		57.1	20.1		8.0		38.3	31.0	Sj	9.0		56.8	0.0	
9.7	40	39.4	32.5		9.4	56	11.9	57.5		9.5	16	8.1	50.6		9.0		53.9	14.8		9.6	52	0.1	10.7	
9.5		51.7	18.4		9.1		26.1	29.3		9.4		20.2	10.5		9.4	38	24.8	58.6		8.5		18.5	47.4	K
9.4	41	8.2	21.9		9.6		26.7	29.9		10		48.6	4.1		9.5		25.0	31.9		9.1		21.3	20.8	
9.1	42	25.0	47.1		9.5		30.0	55.0		9.4	17	6.1	51.2		10	39	14.3	48.4		5.5		42.4	59.4	K
9.7		33.8	33.2		9.5		50.6	59.2		9.1		22.2	1.3		4.3		17.2	33.4	K	9.4		50.4	49.6	
9.8		55.1	50.3		9.1	57	18.2	57.0		8.8	18	4.6	31.3		9.0		40.4	53.0	K	8.2	53	19.8	49.7	K
9.5	43	12.4	38.8		9.7		29.2	24.2		9.0		17.4	52.0		10		55.8	56.2		9.6		44.3	33.9	
9.2		23.7	52.9		8.0		54.4	44.5	K	10		30.8	29.8		9.8		56.6	42.1		10	54	15.7	26.0	
8.6		24.2	7.6	K	9.5	58	11.3	38.6		9.7		54.5	13.2		9.1	40	32.9	53.5		9.6		40.9	0.6	
9.0		33.1	8.3	K	8.8		14.0	3.0		9.8		56.7	0.0		9.5	41	5.7	43.3		9.5		57.2	15.8	
9.8		52.3	48.2		9.4		29.5	26.6		9.8	20	2.6	39.0		9.4		10.7	10.4		9.9	55	1.9	32.9	
9.7	44	0.2	29.5		9.5		55.8	25.0		10		4.5	43.7		9.2		11.3	48.8		10		15.7	51.4	
9.1		26.7	5.9		9.6	59	57.1	10.8		9.4		22.7	47.0		10		25.1	55.5		9.9		21.4	21.5	
9.3		54.4	19.5		9.4	0	2.5	17.7		9.3		27.9	8.9		8.5		37.0	13.1	Sj	10		40.8	35.5	
9.1	45	6.5	12.2		9.2		5.9	34.9		9.3		32.9	59.6		9.3		48.3	48.7		9.3		43.2	52.4	
9.3		9.6	52.4		9.5		37.9	14.9		9.4		45.3	12.4		9.5	42	0.6	20.9		9.9		50.0	42.6	
9.2		25.5	42.3		9.5		52.6	52.2		9.8		53.1	56.6		9.2		2.6	30.3	K	9.7	56	1.8	58.0	
9.0		40.2	33.5		7.8	1	5.2	35.9	Sj	9.3	22	9.2	40.1		9.1		22.0	3.0	K	9.1		15.7	13.5	K
10		53.7	38.2		9.6		10.4	28.2		8.5		19.6	35.3		9.9		35.9	31.4		9.4		17.7	14.2	
9.8		57.3	18.2		9.4		47.5	49.6		9.7		25.4	10.3		9.8	43	1.4	7.4		9.2		28.9	59.4	
9.4	46	9.2	14.2		8.4	2	19.6	17.1	K	9.5		49.4	30.3		9.5		8.8	2.7		9.9		56.4	24.5	
9.1		17.4	48.2		9.5		27.5	45.3		9.1	23	9.3	58.3	K	10		15.5	53.2		8.3	57	12.4	9.0	K
9.7		21.6	31.5		9.4	3	18.1	32.7		9.6		16.0	49.6		8.9		24.0	10.8		10		24.7	31.8	
9.4		27.4	21.3		8.9		37.7	13.1		7.0		18.8	8.7	L	9.5		35.8	33.8		8.9		30.8	54.8	
9.3		33.3	27.0		9.7	4	1.8	28.6		9.2	24	11.6	23.2		8.8		40.3	47.0	K	9.7		44.0	32.6	
9.1		37.2	5.2		10		9.9	12.2		9.3		22.5	14.1		9.5		42.6	36.5		8.5		56.2	12.3	K
9.5		45.1	58.8		9.4		24.3	7.6		9.3		36.1	19.0	K	8.0		45.1	26.0	Sj	8.0	58	6.4	11.8	Sj
10		54.6	58.5		9.1	5	0.8	32.0		9.0		45.5	55.7		9.6		54.6	31.8		10		26.1	42.9	
9.8		55.3	16.8		9.0		9.5	12.0		9.5	25	28.9	44.2		8.9	44	7.5	18.3	K	9.5		27.9	20.6	
10	47	27.5	37.8		9.5		24.8	14.5		8.6		34.3	27.6	K	10		22.6	4.7		9.8		43.9	18.8	
9.4		41.2	7.0		9.4		26.9	29.7		9.6	27	5.2	22.4		9.5		42.2	40.9		8.4		53.0	1.1	Sj
8.9	48	34.4	17.6		8.7		33.0	10.1	Sj	8.8		23.4	33.4	K	10		46.7	35.1		9.5		57.0	27.1	
8.5		41.1	56.9	K	9.2		41.6	53.7		9.5		34.1	27.2		9.1		50.9	5.7		9.4	59	5.5	5.0	
10	49	1.9	40.4		9.8		47.7	23.0		8.0		46.5	40.8	Sj	10		53.4	51.8		9.0		8.0	5.4	K
9.5		9.5	1.7		9.5	6	32.6	31.1		9.5	28	55.9	34.8		7.5	45	4.2	24.5	K	9.8		28.1	47.3	
9.5		15.4	26.5		9.0		38.0	3.7		9.5	30	23.2	2.4		9.4		31.6	30.3		8.7		29.2	18.2	K
9.5		25.9	14.6		8.9	7	3.5	48.3	K	9.8		51.1	42.3		9.2	46	7.5	25.1		10	0	0.5	9.7	
9.3		53.1	55.0		9.7		32.2	32.3		8.5	31	0.3	1.6	K	9.8		20.0	51.5		9.5		12.3	51.9	

801—860				861—920				921—980				981—1040				1041—1100			
4h		—12°		4h		—12°		4h		—12°		4h		—12°		4h—5h		—12°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.4	0	12.6	9.7	9.1	14	6.0	24.3	9.6	26	11.6	19.7	9.4	38	53.4	6.7	8.2	52	23.0	59.1 K
9.9		39.5	13.1	8.7		11.6	16.3 L	8.7		19.9	26.6	7.7	39	4.6	12.8 Sj	9.1		24.0	2.1
9.1	1	16.4	54.3 K	8.9		12.5	52.6	7.0		21.5	50.9 Sj	9.8		37.8	43.9	10		27.1	7.5
9.8		18.7	32.4	9.1		21.4	49.3	9.4		27.6	26.9	10		38.1	12.0	9.1		39.5	43.8 K
9.7		33.0	11.6	9.8		33.2	12.3	9.5		42.2	46.9	9.6		50.6	28.2	9.8		49.6	28.6
8.5		58.5	58.3 K	9.0		52.5	0.0 K	9.6		59.8	8.5	10		51.0	18.5	10	53	10.0	16.7
8.4	2	37.4	22.6 K	9.1	15	10.6	5.6 K	9.0	27	2.5	49.0 K	9.5		51.9	53.2	4.8		10.7	45.1 Sj
9.5		50.2	15.8	9.1		15.7	6.4 K	9.1		11.0	16.1	9.3	40	22.1	37.1	9.4		27.7	18.8
10		55.6	47.4	9.1		24.4	48.0	8.9		39.1	1.2 K	10		28.7	21.0	9.7		36.5	43.1
7.3		57.4	56.7 Sj	9.7		59.8	14.9	9.6		57.5	14.3	9.1		40.2	15.4	9.8		41.6	45.2
9.4	3	9.9	44.0	9.0	16	13.6	54.2	9.6		59.8	14.3	9.4		42.3	41.1	10	54	36.0	57.4
9.8		29.1	8.9	9.2		17.0	19.8 K	9.8	28	16.8	37.8	9.8		57.2	35.2	9.5		48.4	52.6
10		47.8	51.3	9.5		22.1	32.3	9.5		22.9	36.6	9.5		59.9	2.1	9.5	55	36.1	12.9
9.3	4	5.2	15.1	9.6		39.6	25.6	9.1		23.2	22.5 K	9.5	41	30.7	32.1	8.5		50.0	51.3 Sj
9.8		8.7	27.3	10		40.3	42.1	9.3		26.0	22.8 K	9.6		37.3	41.1	9.3		51.8	43.7
9.9		14.3	29.0	9.1	17	6.3	51.4 K	9.3		52.4	8.2	9.5		44.8	58.3	8.9	56	2.6	6.6 K
9.5		55.2	27.6	8.5		7.7	53.9 Sj	9.4		56.6	41.7	8.0		46.3	0.7 L	10		12.5	55.0
9.5		57.7	9.7	9.5		18.7	37.8	10	29	12.0	9.8	9.8	42	1.9	44.9	8.3		13.6	38.7 K
9.1	5	18.5	54.5	9.5		31.7	30.8	9.8		12.3	58.0	9.6		13.2	18.5	9.8		42.9	47.7
9.8		19.9	29.7	8.7		42.8	51.6 K	9.8		21.7	51.7	9.9		19.1	3.7	9.9		44.1	4.2
9.4		38.8	18.2	9.5		43.2	8.7	9.5		52.7	21.8	9.8		48.7	55.6	9.3	57	4.9	32.1
10	6	26.7	14.3	8.5		48.7	38.1 Sj	10		54.2	46.9	8.0		55.2	17.4 K	9.0		10.6	22.7 K
8.2		35.1	40.0 Sj	10	18	6.7	58.1	9.4	30	0.1	26.7	7.9	43	1.8	0.0 Sj	9.3		38.3	12.1
9.8		45.8	51.4	9.4		7.3	11.1	9.5		1.7	51.1	8.8		22.5	34.3 K	9.7		58.8	43.1
9.7		58.1	58.7	9.7		9.0	29.7	10		5.0	13.0	9.3		23.5	6.9	9.7	58	0.7	58.8
9.6	7	2.5	35.1	9.4		10.4	35.1	9.7		12.2	44.2	9.8		48.5	33.1	10		7.6	52.0
9.3		13.7	44.7	9.3	19	7.3	58.8	8.1		28.8	27.5 L	9.0	44	15.5	29.6 K	9.9		18.3	24.7
9.1		14.3	31.1 K	9.5		8.5	8.8	8.5		30.4	51.0 K	9.8		25.5	25.4	8.6		25.8	32.0 K
9.0		30.4	33.8 K	9.9		9.7	17.9	9.0		38.4	9.8 K	9.7		47.0	28.9	9.7		58.5	27.2
9.6		32.2	45.8	10		16.1	51.0	9.6		58.1	42.6	8.0		55.4	11.7 K	9.5	59	14.5	30.5
9.4		58.9	24.7	9.9		31.2	29.7	10	31	3.3	6.9	8.2	45	4.3	59.2	9.6		28.0	28.0
9.8	8	23.8	8.5	9.7		40.0	44.3	9.2		6.2	10.5 K	9.4		28.2	37.3	9.5		41.0	9.5
9.5		23.9	49.8	9.5		48.6	5.7	9.2		32.2	30.9	10		45.0	5.7	10	0	3.6	25.6
9.1		40.8	49.1	9.7	20	12.7	17.7	9.4	32	0.9	30.3	8.5		56.4	22.6 Sj	9.7		18.2	19.9
9.3		45.0	4.0	10		38.3	10.5	5.8		7.8	24.5 Sj	9.9	46	19.3	15.7	8.0		37.9	3.8 K
9.5	9	8.1	57.4	8.5		44.9	58.3 Sj	10		31.2	37.1	10		33.7	12.8	6.2		41.0	40.7 K
9.5		15.7	43.6	9.2		46.8	57.5	10		31.5	43.6	9.8		43.3	42.2	9.5		45.6	33.4
9.5		38.3	30.7	9.7		48.8	11.9	8.4		39.8	49.0 K	9.2		46.5	2.5	9.3		54.9	25.6
9.0		44.9	48.4 K	8.8		58.3	27.4 K	9.5		51.6	49.4	9.1	47	13.6	52.5 Sj	9.5	1	6.0	16.4
9.2		51.0	53.8 K	8.7	21	9.2	20.1 K	9.5		54.0	36.5	8.0		15.8	42.2 L	7.0		6.2	46.5 K
9.8	10	3.1	51.4	9.4		9.7	53.6	9.0	33	3.3	49.0	9.0		45.1	9.4	9.8		16.7	48.8
9.7		5.7	43.8	9.2		14.0	18.5 K	9.8		25.8	23.0	9.6		51.9	43.5	9.2	2	3.0	39.4 K
9.8		17.2	29.0	8.2		16.5	19.2 K	9.1		35.7	23.7	9.8	48	9.4	39.7	10		27.0	38.4
9.5		19.5	0.9	8.2		24.2	35.3 Sj	9.0		40.3	3.1	9.8		52.0	22.8	8.0		46.1	13.0 K
9.8		20.7	31.8	9.5		50.9	28.8	9.1	34	19.1	15.2	9.5		58.8	15.6	9.5		51.3	51.3
9.2		28.6	58.4	7.8		51.5	16.8 K	9.4		40.8	4.0	9.4	49	0.2	53.4	9.5		57.5	58.0
9.1		34.8	14.2	9.7	22	8.4	14.8	9.9		45.4	10.9	9.5		3.4	27.7	10	3	3.6	32.4
9.8		43.0	14.0	8.8		19.4	32.0 K	9.8		55.9	28.4	9.3		7.8	38.4	10		12.9	36.1
9.3		57.8	11.4	9.1		33.0	44.9	6.9		57.6	45.4 Sj	9.1		34.3	2.2	9.3	4	7.2	47.8 K
9.4	11	1.1	10.5	9.4	23	8.9	19.1	8.8	35	28.6	26.4	9.8		34.6	38.3	9.0		17.0	42.0 K
9.7		11.0	9.6	9.6		23.8	14.2	9.9	36	1.6	20.0	8.2	50	10.1	46.4 K	9.2		27.6	59.9 K
9.8		25.4	50.6	10		31.9	29.7	10		9.1	37.3	9.0		12.7	8.5	6.5		36.9	1.8 K
9.8		29.5	53.3	9.9		36.1	34.3	8.8	37	2.4	34.3	10		21.4	20.2	9.5		50.4	55.3
9.8		46.8	56.2	9.1	24	0.1	29.0 K	9.8		15.5	12.2	9.0		38.9	56.8 K	9.1		52.4	25.0
8.3		58.3	5.3 K	7.0	25	11.1	56.6 K	9.3		36.7	56.4	8.6	51	23.4	57.5 K	5.0	5	31.9	2.7 K
9.9	12	8.1	56.6	9.9		17.5	7.4	9.8	38	10.4	22.5	9.5		34.2	51.2	9.0		42.9	35.6
9.8		45.6	56.6	9.7		20.4	35.7	9.1		12.0	27.6	9.7		38.7	51.2	9.5	6	10.1	13.4
6.5	13	6.4	45.1 K	9.0		25.0	37.6 K	9.1		27.5	52.6	9.7		39.9	28.2	8.5		13.2	21.0
8.9		8.3	34.0 K	9.3		32.7	5.4 K	9.8		42.3	41.0	9.5		51.2	12.7	9.2		32.2	24.6
10		38.7	9.1	9.2		37.7	51.8	9.8		52.0	50.1	8.7		52,2	27.4 L	9.5		33.5	58.8

1047: UA var $4^{3}/_{4}$—$5^{3}/_{4}$ 1080: roth 1092: gelbroth

1101—1160				1161—1220				1221—1280				1281—1340				1341—1400			
	5h		−12°		5h		−12°		5h		−12°		5h		−12°		5h—6h		−12°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.5	6	43.3	51.3	9.7	19	28.2	17.6	9.3	31	19.7	53.1	8.0	42	48.4	16.2	K	9.2	53	52.6	56.5	
9.5		56.5	36.2	9.5		35.8	59.7	K	8.5		32.9	32.5	K	9.5	43	18.4	13.5		9.2		56.4	24.0	
10	7	28.0	13.0	10		36.7	48.7		9.5		43.4	43.8		9.7		37.9	57.1		10	54	10.4	24.0	
9.0		32.0	27.7	9.1		37.2	33.3		9.3		52.6	49.9		10		40.3	8.6		9.7		13.0	5.7	
9.5		52.3	24.5	9.7		38.3	19.3		9.0	32	10.7	51.2	K	9.4		50.1	26.9		9.7		32.0	38.1	
9.5	8	7.1	7.5	10		49.7	49.8		9.3		27.2	7.7		10		52.6	29.6		9.5		55.5	53.2	
10		19.7	31.5	9.5		52.3	20.6		9.0		42.2	9.8	M	9.5	44	9.3	11.4		8.5	55	0.9	1.6	
8.5		19.8	21.8	K	10	20	3.9	47.2		9.5	33	3.7	46.3		10		25.9	13.5		9.0		15.5	31.1	
9.2		24.1	41.8		6.5		20.0	1.3	K	9.7		13.4	18.6		10		34.6	29.0		9.5		15.9	23.5	
8.5		35.6	53.3	K	9.7		21.0	33.5		10		27.0	46.2		9.5		44.4	17.5		9.5		20.3	22.6	
8.5		39.6	58.7	K	10		22.1	15.3		10		32.2	6.1		9.2		48.7	49.4	K	9.3		21.3	39.4	
8.3	9	2.9	31.6	K	9.2		45.0	49.0	K	8.0	34	0.3	17.7	L	8.8	45	0.2	3.3	K	9.4		26.6	54.2	
9.2		3.1	11.2		9.3	21	19.6	54.3		8.6		12.1	24.0	M	10		4.3	17.8		9.0		41.3	44.2	
9.8		10.0	5.8		9.0		48.3	43.1		9.0		18.2	35.5		9.5		8.5	31.7		9.6		42.1	33.4	
9.0		25.2	18.3		9.5	22	9.3	11.6		9.8		27.3	6.1		9.3		35.3	5.8		9.5		43.3	22.1	
9.5		40.5	52.0		9.5		15.8	16.5		9.8		30.3	15.5		7.0		56.6	48.2	K	10		51.2	15.4	
8.7		41.6	35.2	K	10		17.1	4.4		8.5		31.1	5.3	K	9.0	46	2.4	13.5		8.7		52.7	57.7	K
9.5		54.0	37.9		10		20.3	42.6		10		39.3	14.6		10		9.6	56.8		9.8		52.7	49.4	
9.3	10	4.3	46.4		9.0		23.3	59.1	K	9.0	35	6.2	8.4	K	8.2		21.3	40.4		9.0		54.1	10.0	
9.5		29.1	38.6		9.3		45.2	9.3		7.2		6.9	22.9	K	10		23.6	26.5		9.7		56.7	57.9	
9.9		32.6	24.4		10	23	21.4	46.1		9.2		13.5	36.7		9.0		25.2	5.5		9.0	56	25.0	7.5	Sj
9.5		52.6	53.4		8.0		31.6	52.4	K	9.0		39.8	31.6	K	9.0		26.5	20.2	K	9.5		34.2	39.8	M
8.5	11	0.6	56.9		9.3		35.0	26.1		9.5		45.6	3.7		9.0		32.7	51.7		9.5	57	4.2	15.0	
8.4		7.0	25.9	K	10		46.2	1.3		9.5		50.9	58.7		7.3	47	11.5	25.8	L	9.7		11.4	27.1	
9.5		14.5	35.1		9.5		53.6	28.1		8.0	36	9.7	25.2	K	9.2		13.3	36.3		9.5		38.5	51.5	
9.5		28.1	38.6		9.5		53.7	55.1		9.5	37	2.3	26.1		9.5		27.2	1.0		9.0	58	17.3	19.0	K
9.8	12	4.8	30.0		9.3	24	0.2	58.7		9.7		39.2	13.8		10		43.1	35.3		9.7		28.5	13.4	
10		14.1	39.4		9.6		1.3	8.7		9.7		45.4	16.9		9.4		49.6	54.5		9.4		39.0	55.5	
9.7		16.4	22.2		9.7		2.3	31.6		9.2		52.1	0.8		9.4		55.7	59.8		9.5	59	13.1	13.8	
9.7		17.9	22.3		9.3		4.2	58.3	K	7.5		57.6	50.2	K	7.5	48	16.7	58.1	K	9.5		15.9	4.0	
10		31.0	34.9		9.5		57.2	7.5		9.5	38	4.4	13.3		9.8		24.2	9.6		9.8		21.3	46.6	
6.2	13	14.3	27.7	L	9.7		59.5	30.6		10		5.4	37.7		10		37.3	23.1		10		21.7	40.8	
9.7		35.0	31.9		10	25	14.0	41.1		8.8		14.3	9.8		9.5		43.4	47.4		9.8		27.8	32.6	
9.5		37.0	1.2		9.3		23.1	24.8		9.3		16.6	8.4		9.5	49	5.0	8.7		9.7		34.3	47.1	M
9.0		39.6	11.0		10		23.3	43.9		9.5		22.4	39.5		10		23.5	51.2		8.8		37.8	30.6	
9.0		41.3	20.4	M	9.5		44.2	39.5		10		27.2	32.7		10		43.0	36.5		9.0		55.3	49.6	M
9.5	14	8.4	27.5		10		51.4	23.6		9.7		29.0	58.6		10		49.5	53.0		10	0	4.8	58.4	
9.4		19.1	7.0		9.8		56.5	31.4		7.7		42.9	30.0	K	9.7	50	8.9	34.9		9.4		8.9	33.6	
9.5		24.2	14.1		9.5	26	11.8	58.3		9.5		56.3	8.3		9.0		46.5	58.9	K	8.0		12.9	2.8	L
10		52.6	57.3		9.0		26.6	24.6	M	7.8	39	19.1	29.0	K	9.5		48.6	21.9		9.3		18.2	41.1	M
10	15	16.4	51.5		8.6	27	7.3	34.2	K	8.5		26.5	19.9	K	9.3	51	7.4	36.2		9.5		21.2	15.3	
8.7		21.2	16.3	K	9.8		10.8	11.5		10		28.6	44.8		9.7		11.0	7.1		9.0		35.1	11.8	M
9.6		25.4	21.5		9.7		22.3	2.7		9.4		43.8	51.0		9.2		20.3	45.1		9.5		40.4	23.9	
10		53.7	59.0		9.0		30.5	32.1	K	9.0		44.8	51.9		9.0		20.9	49.6	K	8.5		55.9	1.1	M
9.7	16	4.2	17.7		9.6		31.1	38.5		8.0		49.6	47.0		8.5		31.1	11.7	Sj	9.5	1	7.2	18.0	
9.5		9.7	5.1		9.5	28	15.6	50.9		9.5		59.4	15.5		10		32.9	2.3		9.5		14.3	44.7	
9.6		10.2	19.2		9.5		28.2	36.2	M	9.3	40	18.8	51.0	K	9.5		40.7	48.6		10		27.2	36.2	
9.3		29.6	26.4		9.1		30.8	30.5	M	9.5		20.3	11.8		10	52	6.9	55.3		10		27.6	30.9	
9.5		40.0	35.6		10		48.8	15.3		7.5		31.8	51.9	Sj	9.8		12.4	25.0		10		32.4	50.5	
9.0		50.2	6.9	K	9.9	29	14.6	25.9		9.5		46.3	7.3		9.0		29.1	20.8	M	10	2	4.6	35.4	
9.0		51.9	3.2		9.5		15.4	44.2		9.7		53.4	37.2		10		33.9	5.5		8.5		12.9	36.9	
9.0		53.0	0.6		8.8		20.2	26.2	L	9.5	41	31.4	39.4		8.4		40.2	50.7	L	9.1		23.4	56.8	K
9.5	17	6.2	41.0		10	30	0.9	59.0		9.3		44.0	59.9		9.1		43.6	43.1	L	9.5		30.0	8.2	
9.0		17.1	15.7	K	9.7		25.5	45.0		9.5		49.2	2.9		10		50.9	25.4		10		45.3	32.5	
9.5		31.1	36.6		9.0		31.2	28.6	K	9.0		55.7	50.0		10		55.9	49.0		10		52.1	13.5	
9.8	18	34.4	53.6		9.5		35.0	56.2		8.3	42	7.3	23.0	K	9.3	53	24.0	40.5		8.5	3	13.8	31.3	K
7.0		37.7	40.6	K	8.5		52.5	47.3	K	10		13.2	3.8		6.0		36.6	54.3	L	10		32.1	10.0	
10		44.5	47.3		10		53.3	39.3		10		42.6	26.2		10		41.5	53.4		10		48.3	47.3	
9.5		45.3	23.3		9.0		55.1	4.7	M	10		43.9	45.3		10		42.4	23.7		9.5		57.2	17.1	
9.5	19	26.2	18.5		9.5	31	13.3	41.0		8.5		44.8	36.3		8.5		48.1	10.2	Sj	9.5	4	13.9	1.0	

1401—1460				1461—1520				1521—1580				1581—1640				1641—1700			
6h		−12°		6h		−12°		6h		−12°		6h		−12°		6h		−12°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.7	4 14.8	25.6		9.4	16 23.7	37.8		9.9	25 1.0	24.9		9.2	33 41.1	47.5		9.8	42 26.7	51.2	
9.0	25.3	42.9	K	9.1	26.0	54.3	K	10	2.5	24.1		9.3	51.6	54.2		7.7	32.3	30.5	K
10	38.4	57.1		9.0	52.7	40.5	M	9.9	10.1	27.5		9.2	34 5.3	54.5		9.0	42.9	17.1	K
10	50.0	7.7		8.5	17 1.5	30.2	M	9.9	12.3	45.0		9.4	9.6	30.1		9.5	45.1	46.7	
8.5	58.6	34.1	K	9.5	4.7	39.5		9.7	23.0	20.8		7.3	13.9	2.8	K	9.2	45.7	32.7	
9.8	5 29.1	0.8		9.4	5.1	55.0		10	30.2	31.1		9.7	35.3	22.9		9.5	43 2.2	8.2	
8.8	30.4	13.9	K	9.1	5.9	34.5		10	32.3	33.3		8.8	47.4	58.5	K	9.5	3.6	59.1	
9.0	37.3	43.7		9.8	10.8	41.0		9.7	37.1	27.2		8.5	48.1	47.8	K	9.8	6.7	51.3	
9.3	54.9	31.1		10	14.8	44.9		9.8	39.1	28.9		9.4	48.8	27.8		9.3	12.2	5.9	
9.0	59.8	27.2		6.3	39.4	53.4	Sj	9.4	41.9	46.6		9.5	55.7	6.2		10	17.0	29.7	
9.6	6 5.9	28.4		9.5	54.7	6.2		9.5	43.2	39.2		9.1	35 33.3	30.7		8.3	18.7	48.1	K
10	14.3	43.6		9.5	18 6.5	27.4		10	50.8	29.0		10	35.5	40.3		7.6	24.3	25.7	K
9.4	38.2	37.5		9.1	7.1	34.9	M	9.7	26 7.4	13.0		9.1	37.1	9.9		9.4	53.4	46.5	
10	38.3	53.8		9.4	12.3	48.2		9.3	12.5	39.2		10	39.3	56.7		9.1	44 9.9	38.5	
10	41.7	51.5		9.7	14.6	33.0		9.1	23.1	59.2		9.6	40.0	51.8		10	11.0	32.9	
9.9	51.1	41.5		9.1	17.0	56.2	K	8.5	25.6	47.5		9.4	51.7	50.7		9.5	20.7	58.0	
9.5	7 37.9	32.5		9.5	19.1	42.0		9.3	26.2	29.8		8.5	58.1	47.9	Sj	9.8	21.5	32.0	
9.3	44.6	1.3		9.8	24.7	7.5		9.8	38.2	7.0		9.1	36 10.3	10.6		9.5	30.2	12.5	
8.5	59.9	50.4	Sj	9.2	24.8	18.2	K	9.4	46.6	35.4		9.0	23.9	16.1		10	40.0	42.9	
9.0	8 7.0	17.8	M	9.0	36.8	20.5		8.9	48.1	0.5	M	9.8	25.0	53.5		9.2	49.8	56.8	
8.9	38.6	32.0		8.5	38.0	9.9	K	10	56.8	28.5		9.5	36.0	31.3		8.8	56.7	32.4	
8.8	9 4.2	40.7	M	9.3	48.2	28.7		9.1	27 10.7	31.6		8.5	37.5	46.0	K	9.1	57.1	45.0	
8.8	12.0	41.4	M	9.4	19 1.8	46.7		9.3	30.7	10.4		9.1	44.3	56.2		10	45 5.2	50.3	
10	31.2	37.0		9.5	2.9	15.2		9.0	40.5	21.8	K	9.8	37 2.6	24.0		9.0	11.4	57.5	K
9.5	37.6	47.7		9.2	9.6	1.8	M	8.5	28 6.1	7.3	K	9.0	4.2	42.3	K	8.9	13.0	42.1	M
10	10 9.3	46.0		9.8	13.3	47.7		9.8	6.9	48.5		10	19.8	34.5		9.7	23.9	8.5	
9.9	15.2	32.5		9.4	14.9	49.5		7.8	19.7	29.8	K	8.8	30.0	40.4	K	9.5	28.3	7.0	
8.8	15.8	11.9	Sj	9.4	29.9	31.2	M	9.8	20.0	21.6		9.1	32.7	15.7		9.1	53.2	8.7	
10	34.2	30.8		10	31.2	25.6		9.3	31.9	57.9		9.2	33.1	22.5		9.2	55.8	12.8	
9.7	37.3	34.6		9.3	34.8	58.9		9.4	36.9	43.0		9.0	55.3	42.9	K	9.6	58.8	55.0	
9.0	45.5	59.2	K	9.7	41.6	14.0		9.5	51.9	42.0		9.5	59.0	30.3		9.5	46 7.7	30.4	
10	59.9	12.1		9.4	20 0.1	2.0		9.8	56.6	58.0		9.8	38 10.8	57.5		9.9	13.7	50.6	
10	11 14.7	35.8		10	7.0	58.0		9.6	29 5.2	4.6		9.4	16.7	25.4		9.3	15.6	25.3	
9.0	27.5	54.7	K	8.0	31.8	45.2	K	9.5	15.0	51.7		9.4	24.1	1.4		10	21.2	43.0	
9.5	29.8	20.4		9.7	41.5	52.1		9.5	19.6	2.8		9.5	34.9	59.9		9.6	22.4	14.5	
9.1	30.7	28.0	M	10	50.1	1.6		9.0	24.0	49.8	K	9.5	39.3	56.6		9.8	24.1	43.3	
9.0	43.6	3.0	K	9.5	21 0.4	49.6		9.0	24.3	43.1		9.8	50.6	27.1		9.1	25.0	44.1	
8.7	50.2	30.7	M	10	1.7	40.9		9.4	42.5	38.6		9.3	52.6	29.3	M	9.1	25.9	48.1	M
8.8	57.2	37.6	M	9.4	27.2	4.2		9.0	30 10.5	43.8		9.3	55.1	10.5		9.7	41.6	40.2	
9.2	12 12.7	23.4		7.7	36.5	57.5	K	9.3	13.3	43.2		9.9	39 22.7	51.6		9.3	48.2	7.6	
9.0	17.5	29.0	K	9.8	39.2	40.0		9.3	16.1	4.7		9.4	44.2	24.8		9.4	48.6	25.0	
8.0	35.8	28.5	K	8.8	39.8	46.5	K	8.6	21.8	37.0		9.1	40 5.6	45.9		10	53.9	38.2	
9.5	39.7	30.5		7.6	53.6	57.5	K	8.8	44.7	33.6	K	7.8	22.6	2.5	K	9.5	55.2	53.1	
9.8	13 20.2	48.1		9.9	22 24.5	5.0		9.8	50.3	37.4		9.0	23.0	42.0		9.8	47 15.4	57.6	
9.3	21.0	1.4		9.1	51.4	53.7	K	9.0	51.5	42.1	K	9.3	37.1	1.6		10	26.1	35.0	
9.3	21.4	0.4		9.1	56.2	6.1		6.8	59.7	50.6	K	9.1	37.2	38.8		8.8	30.9	42.4	
9.8	14 11.3	13.6		8.2	23 30.4	15.9	K	9.4	31 5.0	43.4		9.4	39.0	22.1		9.3	40.0	19.6	
9.5	24.2	40.0		9.6	32.6	5.4		9.4	6.9	27.5		9.5	41.1	12.2		9.4	43.2	9.8	
9.5	30.9	15.4		9.4	40.0	51.1		9.9	32.3	22.4		9.2	56.6	20.3		9.2	53.9	57.3	M
9.1	35.1	36.6		9.0	51.1	23.1	K	9.5	36.7	30.0		9.8	41 0.5	54.3		9.9	55.8	50.6	
9.8	44.2	37.2		9.3	52.8	36.8		8.5	43.8	55.3	K	9.5	13.3	9.7		9.5	58.3	11.1	
8.4	44.7	4.4	K	10	56.8	31.6		9.3	45.4	32.7		8.7	18.7	19.2	M	8.9	48 2.6	30.2	M
9.6	15 2.5	55.1		9.7	58.8	36.1		9.5	51.1	11.5		9.8	34.9	58.8		9.0	7.5	20.7	
9.6	13.6	4.4		10	24 6.6	15.5		9.6	51.6	27.1		6.8	45.0	41.1	L	9.0	20.1	35.7	
9.8	25.1	28.6		9.1	13.3	24.9	K	10	32 0.7	50.9		9.0	46.4	16.6	M	10	23.5	55.0	
9.5	37.3	14.0		8.8	14.0	44.2	K	9.5	40.7	7.8		8.8	50.2	5.0	M	9.1	32.1	48.7	
8.5	49.4	53.2	K	9.3	15.4	13.9		10	52.0	42.0		9.5	55.3	29.0		10	34.2	46.8	
10	51.2	36.0		5.0	38.9	17.2	K	9.5	33 7.7	7.6		9.6	42 9.0	8.3		9.0	39.7	6.0	M
9.7	57.5	52.3		8.5	39.7	7.4	K	10	10.8	54.1		9.4	22.6	42.6		9.5	52.6	2.1	M
9.4	16 0.8	11.3		7.2	41.9	27.5	K	9.0	28.0	32.5		9.5	25.1	23.3		9.9	49 13.2	49.3	

1701—1760				1761—1820				1821—1880				1881—1940				1941—2000			
	6h	—12°			6h—7h	—12°			7h	—12°			7h	—12°			7h	—12°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.7	49 21.8	28.4		7.3	57 11.8	52.8	K	9.8	3 33.3	28.1		9.3	10 13.4	33.3		9.4	17 16.6	7.6	
9.8	34.0	19.6		9.0	17.4	55.8	K	10	37.2	7.7		9.0	17.1	21.2		9.0	17.3	29.0	K
9.0	36.9	40.3	M	8.2	18.6	4.5	Sj	8.9	4 10.6	25.1		8.5	23.5	35.7	Sj	9.8	27.9	57.0	
9.1	41.1	47.4		9.1	22.7	39.5		8.6	14.9	58.3		9.3	24.5	37.5		9.3	31.0	3.3	
9.4	48.7	52.8		9.5	52.8	29.7		9.0	23.1	17.4		10	35.9	41.8		9.6	37.1	52.0	
9.8	50 5.5	32.6		10	58 8.5	40.7		10	26.5	37.5		9.2	42.4	32.3		9.4	37.2	56.5	
10	16.8	51.5		9.0	9.3	55.9		9.1	27.6	17.4		10	11 23.2	49.1		9.8	40.0	59.9	
9.3	20.8	43.0		10	23.0	38.0		9.9	39.5	10.4		10	23.7	36.0		9.6	41.5	54.4	
9.8	21.2	37.4		9.8	24.0	51.0		8.9	41.4	37.4		9.3	24.7	32.0	K	9.4	47.4	54.1	
9.3	23.7	0.7		9.6	27.5	37.2		9.8	43.5	10.4		9.9	47.1	44.1		9.8	51.8	2.9	
9.5	38.1	45.4		8.5	31.9	6.8	K	9.2	45.4	43.2		9.8	55.9	13.8		9.7	18 7.2	4.9	
9.6	46.5	20.1		9.8	40.2	45.8		7.8	45.5	50.0	Sj	9.9	12 0.8	26.5		9.6	8.7	47.6	
9.4	49.0	42.1		9.6	41.7	6.9		9.4	5 9.7	26.1		9.9	1.0	30.2		9.5	12.3	52.5	
8.5	54.7	8.4	Sj	10	45.9	6.6		9.6	14.7	28.6		9.0	22.4	59.9	K	8.5	12.8	3.2	K
9.5	59.0	52.8		9.3	53.7	0.6		9.8	20.6	46.5		9.4	27.4	59.3		9.5	15.6	20.0	
9.5	59.0	41.0		10	55.1	20.3		10	21.7	50.5		9.5	30.4	8.4		9.8	24.8	28.3	
9.1	59.0	9.8		7.3	59.4	35.5	L	10	25.2	57.9		10	38.2	12.6		9.1	31.0	29.5	
9.7	51 1.6	1.4		9.8	59 11.7	46.7		9.2	34.4	42.7		8.8	38.2	14.7	K	9.8	43.5	44.9	
9.7	2.7	7.8		9.5	12.5	49.8		9.8	43.8	32.9		9.8	42.6	10.3		8.7	56.5	17.4	Sj
9.2	6.3	30.3		9.2	19.9	34.2		9.4	53.1	46.7		9.7	13 6.0	16.6		9.1	19 3.6	46.1	
9.0	15.1	46.4		8.5	24.1	43.8		9.8	53.6	18.0		9.7	9.1	31.4		9.1	10.9	56.1	
9.0	28.5	49.0		9.3	32.6	7.4		8.5	6 11.7	8.1	K	9.5	9.4	7.8		9.0	12.4	0.9	
9.3	31.1	42.7		9.4	40.0	36.2		9.0	13.6	21.8		9.5	9.7	24.2		9.0	17.3	3.6	
9.0	42.7	47.6		10	45.9	19.0		9.0	15.3	41.9		8.7	27.5	1.2	K	9.8	32.2	15.6	
9.0	57.0	19.2		9.5	46.0	38.4		9.0	15.7	38.3		9.4	27.8	34.1		9.0	32.7	50.8	
9.0	52 27.1	4.7	L	9.7	49.8	31.2		10	15.7	26.4		9.5	14 2.4	56.6		10	36.6	49.0	
9.5	29.6	43.1		9.6	50.9	28.8		9.0	23.3	53.0		9.5	5.8	32.0		10	38.3	51.2	
8.8	35.5	40.5		6.9	52.7	10.6	L	9.5	27.0	14.4		9.8	21.5	21.7		9.3	39.2	41.2	
8.0	53.0	48.0		9.4	53.6	40.6		9.3	37.5	0.3		8.8	22.4	1.0	K	7.2	52.9	54.0	
9.8	58.2	30.8		8.3	0 15.5	0.8	K	9.5	48.2	20.9		9.8	27.2	51.1		9.8	57.6	55.5	
9.2	53 20.5	25.8		10	21.9	55.8		9.4	52.1	56.1		8.8	29.5	40.0	K	8.5	57.8	10.4	
9.4	26.9	16.5		8.3	25.7	8.4		9.8	59.1	38.6		10	30.9	34.8		9.8	58.4	46.5	
9.0	39.8	35.3		10	28.4	31.7		9.8	7 0.8	55.4		9.2	36.8	57.6		9.1	20 11.0	38.7	
9.3	55.8	57.9		8.6	32.8	51.8	K	9.6	11.7	32.4		9.3	37.5	23.1		9.0	20.9	12.6	
9.1	59.0	38.4		9.5	42.2	44.8		10	13.9	34.1		9.0	49.0	44.2	K	9.8	21.8	5.3	
8.7	59.1	56.9	K	9.5	54.7	11.7		9.5	14.2	22.9		9.6	50.1	46.7		9.2	22.6	12.6	
9.1	54 8.5	39.0		9.8	57.0	2.8		9.8	22.1	21.0		10	53.7	49.8		9.8	34.5	18.0	
9.4	27.0	31.6		9.2	1 0.4	4.0	K	10	23.0	41.6		10	55.9	21.0		8.5	37.7	3.9	L
8.8	45.7	7.5		10	11.0	19.6		10	23.7	58.1		10	15 6.8	58.7		8.5	47.3	7.5	L
8.2	49.4	55.7	K	10	17.4	27.5		7.9	27.2	34.1	Sj	9.1	22.3	21.4		10	58.8	58.2	
9.5	54.2	6.0		9.8	19.1	45.5		9.0	33.1	16.7	K	10	29.5	28.1		9.4	21 4.3	23.9	
9.2	58.0	29.6		9.6	19.5	2.1		9.5	35.8	30.3		9.5	38.4	11.8		10	4.4	28.9	
9.8	55 9.0	36.8		10	20.3	20.5		10	55.0	38.1		9.5	44.2	1.5		10	17.2	45.8	
9.5	13.5	7.0		9.1	22.0	28.9		9.8	8 25.3	55.4		9.1	16 0.5	38.5		9.4	25.7	25.4	
8.5	24.4	18.0	K	9.7	40.1	56.4		10	31.9	36.9		9.2	5.4	30.6		9.0	27.3	50.0	Sj
9.1	24.4	34.9		8.7	43.3	18.5		9.8	51.0	38.0		9.4	12.5	16.6		9.8	31.4	28.2	
8.8	32.2	24.8	K	9.8	45.8	20.2		10	55.5	7.7		8.7	13.6	15.0	Sj	9.8	40.3	54.3	
9.5	53.6	1.9		8.5	48.4	52.4		10	59.4	56.6		9.4	19.5	21.0		8.0	42.9	39.8	Sj
9.8	55.0	51.5		7.5	49.9	39.4	Sj	9.3	9 2.1	58.4		9.2	22.0	18.8		8.9	22 16.8	3.4	K
8.0	58.9	59.3	K	9.4	56.5	33.3		10	9.6	47.4		9.3	32.0	18.0	K	9.0	28.3	31.9	
9.3	56 0.2	48.4		9.8	56.6	28.4		7.3	11.7	48.4	L	10	36.8	29.7		7.5	35.8	50.2	L
8.0	5.5	52.9	K	9.0	2 3.3	23.5		8.1	12.7	17.3	K	9.3	40.0	11.5		9.2	41.0	24.1	
9.8	25.8	10.0		8.9	11.8	5.6	K	10	26.5	54.7		8.9	41.0	23.5		8.9	53.1	13.1	K
10	27.3	41.9		9.8	40.1	19.0		9.4	39.2	28.4		9.1	44.0	19.0		8.7	23 9.9	3.5	K
10	28.8	27.5		9.0	47.4	57.1	K	9.9	39.3	24.3		9.8	45.4	38.4		10	21.1	13.0	
9.0	30.6	0.3		9.0	3 3.7	51.0	K	9.8	41.6	33.2		9.4	53.3	52.4		9.9	43.6	41.7	
9.1	34.5	5.9		9.8	6.5	37.7		9.2	10 0.8	36.2		9.1	17 3.9	12.5		9.2	57.4	27.8	
9.8	44.7	8.4		9.5	22.5	13.2		9.7	4.9	40.8		8.8	7.3	42.6		8.0	24 7.8	52.0	Sj
9.5	57 2.7	8.5		9.3	25.4	2.0		9.6	7.2	35.5		9.2	8.2	1.6		9.2	16.6	30.0	
8.7	6.8	20.7		9.4	25.9	19.7		9.3	10.2	28.4		9.5	13.0	51.6		10	23.5	8.9	

2001—2060

m	7h m s	−12° ′	
9.1	24 24.4	56.0	
9.1	27.4	28.9	K
10	31.2	47.8	
9.3	31.9	20.0	
9.2	32.7	25.1	
8.3	34.8	13.2	
9.5	40.3	35.5	
10	43.3	44.4	
8.5	48.5	28.2	K
9.6	57.7	41.6	
9.5	25 10.7	29.1	
9.5	12.3	26.5	
10	25.1	35.4	
8.8	26.7	45.4	
9.8	32.3	11.5	
9.0	48.2	34.5	K
9.0	49.0	34.5	K
8.9	55.1	34.2	K
9.3	26 10.4	30.8	
9.0	16.2	46.0	
9.3	19.7	44.0	
9.9	22.4	28.9	
9.4	23.9	41.2	
10	26.8	53.4	
8.8	34.9	48.5	Sj
9.4	35.5	43.1	
9.6	37.1	42.1	
9.8	45.3	44.7	
10	50.5	14.2	
9.8	51.5	8.8	
9.0	27 3.8	53.2	
8.3	23.9	43.6	Sj
9.8	29.7	29.2	
9.1	33.9	15.8	
8.7	40.9	3.2	K
8.3	46.5	31.9	
9.3	46.8	51.0	
9.5	56.1	43.9	
10	28 13.0	27.2	
9.4	28.4	5.0	
9.4	29.2	49.3	
9.4	32.3	50.1	
10	33.5	38.0	
9.0	57.0	27.5	
9.0	29 19.2	7.2	
10	26.3	11.7	
10	39.0	41.5	
10	50.1	26.1	
9.0	56.7	10.1	K
9.0	56.8	44.3	
9.8	58.9	6.8	
8.4	30 0.2	31.6	K
9.6	4.1	33.0	
9.1	12.6	44.0	
9.0	15.8	54.5	
10	28.3	12.3	
9.2	40.2	50.3	
8.9	47.9	59.0	K
10	50.4	31.4	
9.0	52.0	37.5	K

2061—2120

m	7h m s	−12° ′	
9.8	30 54.8	15.6	
9.1	56.9	26.1	
9.5	31 1.1	2.2	
10	10.3	24.5	
9.1	19.7	6.2	
9.0	22.9	59.0	K
9.5	36.2	46.1	
10	40.2	20.7	
10	46.3	37.6	
9.8	55.1	19.3	
9.7	32 3.8	18.2	
10	5.2	44.1	
9.8	7.3	34.9	
9.8	12.9	25.8	
9.4	14.0	53.4	
9.3	49.7	6.8	
9.8	55.1	43.5	
9.8	55.4	38.1	
8.3	59.8	11.1	K
9.8	33 9.5	31.4	
10	10.2	49.9	
9.8	16.8	45.4	
9.0	28.4	36.7	
9.1	47.5	41.5	
9.0	50.0	1.8	
9.4	50.1	47.8	
8.5	52.8	58.7	K
9.9	53.3	5.6	
9.4	34 24.2	12.0	
9.7	29.7	51.0	
9.1	40.4	19.9	
9.2	35 9.5	51.6	
10	14.7	28.5	
9.5	17.3	43.5	
9.0	22.8	32.4	
8.7	24.3	56.1	
9.3	35.8	15.5	
8.3	52.9	38.5	
9.7	54.2	13.6	
8.5	36 5.4	19.9	L
9.0	12.1	34.3	
9.1	12.7	13.0	
9.8	16.8	54.6	
8.9	27.5	3.4	K
9.5	30.6	41.6	
9.5	30.7	37.4	
9.8	34.5	44.8	
9.5	35.3	59.5	
9.6	50.5	41.3	
9.8	53.8	16.5	
8.5	54.9	25.4	K
10	56.9	23.8	
10	59.9	21.3	
9.5	37 14.3	57.2	
10	14.8	22.7	
10	21.9	35.2	
9.4	24.1	43.2	
9.2	32.1	30.6	
10	32.3	43.5	
9.3	36.5	25.6	

2121—2180

m	7h m s	−12° ′	
9.0	38 8.6	48.0	K
9.6	21.4	36.2	
9.1	28.7	12.3	
9.8	29.8	16.5	
9.0	34.5	5.4	K
9.8	43.4	30.0	
9.5	50.6	4.7	
10	58.9	20.5	
10	39 17.0	36.7	
8.0	30.1	3.7	K
9.3	32.5	25.6	
10	39.4	8.9	
9.7	41.2	50.7	
9.7	50.3	59.7	
6.8	57.4	19.4	L
8.5	40 9.3	59.8	
9.7	18.8	16.4	
9.5	19.6	49.3	
9.3	19.9	57.8	
9.3	20.8	2.5	
9.8	38.8	18.3	
10	46.6	48.1	
9.5	48.0	0.0	
9.5	57.5	4.3	
8.7	57.8	39.7	Sj
9.1	41 9.9	40.4	
9.1	12.1	23.0	
9.6	23.3	15.3	
9.2	25.7	50.6	
9.3	27.7	54.6	
9.2	40.8	3.7	
9.8	46.2	37.9	
9.0	47.2	51.8	
9.6	42 1.8	56.6	
9.5	3.1	49.9	
10	4.5	44.6	
9.5	5.6	32.7	
9.5	16.6	6.3	
10	24.4	25.6	
9.5	29.6	7.4	
9.0	33.6	53.9	K
9.5	34.8	18.1	
10	38.9	39.4	
6.8	44.3	58.8	K
9.8	58.2	29.6	
9.4	59.5	5.6	
10	43 8.7	52.1	
9.5	10.0	3.8	
10	18.2	28.7	
9.3	28.1	53.7	
10	28.4	44.3	
9.8	43.3	24.9	
9.8	46.5	57.2	
8.5	44 1.5	48.3	Sj
9.8	19.1	51.7	
8.1	26.2	14.6	Sj
9.9	35.0	23.1	
9.6	35.4	28.8	
7.0	54.5	27.0	K
10	56.0	38.8	

2181—2240

m	7h m s	−12° ′	
9.3	45 3.0	2.6	
9.0	3.1	36.0	K
9.0	4.8	19.6	K
9.5	7.4	43.7	
9.6	20.4	10.7	
10	42.6	31.5	
10	50.3	15.0	
9.4	56.9	16.6	
8.8	59.8	37.9	
9.2	46 1.0	44.3	
10	18.2	32.8	
9.2	21.4	25.5	
10	25.5	46.8	
9.7	53.5	33.6	
10	54.6	8.9	
10	47 7.0	35.1	
9.6	7.8	17.2	
10	14.4	55.5	
9.3	19.8	43.4	
9.8	22.0	59.0	
8.8	22.2	43.1	
9.1	28.8	53.8	
9.6	33.1	12.7	
8.4	48.9	27.1	K
10	50.2	15.0	
8.6	53.2	17.9	K
8.8	48 8.8	33.4	K
8.1	12.0	54.0	K
10	20.9	49.0	
10	22.1	41.7	
10	23.4	36.3	
9.8	30.4	37.7	
9.3	40.5	42.3	
9.2	44.8	59.2	
9.3	47.8	14.2	
10	49 1.4	23.1	
6.8	11.8	13.6	
9.8	12.0	46.5	
10	13.9	22.1	
9.4	14.8	40.9	
10	29.5	2.7	
10	30.6	29.8	
9.7	35.3	59.1	
10	37.1	52.6	
9.7	37.8	44.3	
9.7	43.3	24.1	
10	54.7	13.1	
10	56.4	21.2	
7.5	58.4	32.9	K
9.9	50 11.7	2.7	
8.6	14.6	2.8	K
9.8	18.6	35.7	
9.3	25.5	47.9	
9.3	26.7	53.3	
10	31.0	59.1	
9.9	38.1	29.0	
9.8	41.3	34.4	
9.7	50.3	25.4	
9.3	52.0	53.9	
9.5	52.5	54.8	

2241—2300

m	7h m s	−12° ′	
9.8	50 57.7	7.1	
9.8	58.4	22.9	
9.1	51 10.0	58.6	
9.8	18.7	11.3	
9.6	31.7	55.2	
9.4	35.0	52.3	
8.3	43.3	34.8	
10	46.3	44.6	
9.4	49.2	33.0	
9.8	58.7	13.5	
9.5	52 5.4	11.0	
8.7	8.4	55.4	
9.3	10.3	47.0	
9.4	12.2	30.1	
9.7	21.1	39.4	
9.6	22.0	59.9	
9.6	28.7	16.5	
10	38.8	9.3	
8.7	39.0	56.2	
8.5	42.1	7.0	K
9.5	50.4	53.5	
10	53.2	15.3	
7.6	58.3	28.2	L
8.7	53 11.7	58.0	
9.8	14.5	46.2	
9.3	34.2	39.9	
9.1	34.9	51.4	
9.3	36.5	8.5	
8.5	39.6	6.5	K
9.5	53.7	39.6	
10	55.1	37.8	
9.0	56.4	40.1	
8.9	59.7	40.6	
9.0	54 1.6	38.9	
var	1.7	26.6	
9.2	6.7	59.6	
9.8	11.3	16.0	
9.7	27.7	22.8	
8.7	36.4	49.5	
8.3	37.4	23.4	Sj
10	40.3	15.3	
9.3	46.3	23.9	
8.8	53.6	19.9	Sj
9.5	55.7	19.0	
9.9	55 2.1	42.2	
9.1	8.8	8.9	
10	9.1	10.9	
8.3	18.7	23.9	K
10	22.0	37.3	
9.9	30.9	30.2	
9.0	31.8	24.4	K
9.9	34.5	19.2	
9.1	39.1	47.8	
9.7	50.7	41.6	
9.9	53.8	8.1	
9.8	56 6.4	42.4	
10	19.4	0.0	
9.4	20.2	53.9	
10	30.3	23.5	
9.0	33.0	29.2	K

2301—2360				2361—2420				2421—2480				2481—2540				2541—2600			
	7h—8h	−12°			8h	−12°			8h	−12°			8h	−12°			8h	−12°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.1	56 33.3	36.3		9.7	3 1.2	28.5		9.8	8 55.7	50.0		9.3	15 10.0	55.2		9.1	21 13.8	35.0	
8.5	37.1	48.0	K	9.7	2.3	31.8		9.9	56.5	30.5		9.3	12.7	19.2		9.5	15.5	16.1	
9.8	54.9	15.3		9.8	6.5	0.2		9.5	57.8	0.7		9.3	28.5	6.3		8.5	21.9	45.6	K
10	57.4	26.1		9.2	9.4	19.4		9.4	9 1.8	43.8		9.3	30.9	26.1		9.8	22.9	41.4	
10	59.0	37.8		10	11.5	51.4		9.7	3.6	40.0		10	39.6	49.6		9.1	23.7	9.3	
9.8	57 2.2	50.5		9.5	15.8	33.0		9.5	4.3	12.8		9.5	40.5	20.5		8.5	30.2	11.3	L
10	5.9	1.0		9.8	17.5	23.8		10	13.5	19.6		8.6	47.1	11.7		8.8	35.0	15.0	
9.4	8.3	21.8		9.3	21.0	46.4		9.2	13.8	18.3		10	49.7	2.8		9.4	22 7.5	42.9	
9.8	8.7	19.5		9.3	24.2	46.4		9.8	13.9	23.3		9.6	58.6	51.8		9.0	25.1	58.0	
9.6	9.7	16.1		9.0	25.1	44.3		9.0	27.3	32.0		6.6	59.1	35.3	Sj	9.4	27.6	33.3	
9.3	11.6	34.7		10	28.8	25.3		9.2	34.4	11.0		9.7	16 13.2	27.0		8.3	34.3	24.6	K
9.1	17.3	34.3		9.5	34.4	5.0		9.4	36.6	26.0		10	19.8	32.0		8.1	36.1	21.6	K
8.9	30.0	32.3	Sj	10	47.9	24.2		9.3	55.8	27.6		9.8	23.9	33.5		9.5	56.2	35.2	
10	39.3	49.7		9.8	49.1	27.4		10	10 2.7	51.9		9.8	28.3	59.1		9.1	23 9.5	17.3	
7.7	42.0	43.5	Sj	9.0	54.2	1.4	K	8.3	2.9	8.6	K	9.5	31.5	37.6		9.3	17.0	52.0	
9.6	43.7	49.5		9.8	55.0	15.0		9.0	7.6	7.6	K	9.8	39.2	20.2		9.3	29.8	33.3	
9.2	57.1	46.8		9.7	59.4	47.7		9.5	18.4	12.0		8.5	39.6	2.1	K	7.2	36.5	58.8	Sj
9.5	58 0.4	46.2		9.5	4 1.7	25.0		8.3	22.9	26.5	K	9.0	48.1	46.5		8.2	37.9	8.6	K
9.5	9.7	25.1		9.2	1.8	20.2		9.8	24.7	54.4		9.2	17 4.1	45.6		9.1	44.5	52.0	
10	26.0	40.1		9.5	2.5	27.8		9.7	27.4	11.5		8.8	7.2	14.2	K	9.1	50.8	27.3	
9.6	29.6	20.3		9.7	12.9	24.8		9.0	31.1	32.3		8.7	21.7	19.6	K	9.5	24 2.7	36.6	
9.5	30.7	5.8		9.2	21.2	37.6		10	32.0	50.4		9.4	29.3	1.4		8.9	3.2	9.8	K
10	33.1	36.7		9.0	24.0	30.1	K	10	41.8	32.0		9.4	29.4	43.4		10	10.4	42.9	
9.7	40.7	17.0		9.4	27.8	47.8		9.6	42.6	14.4		9.4	42.7	11.8		10	16.9	22.6	
9.8	43.0	4.4		5.0	28.1	29.9	Sj	9.8	58.9	36.0		9.8	50.6	9.6		9.4	58.2	2.4	
9.8	43.9	17.6		9.5	41.8	54.8		9.8	11 0.1	17.9		9.5	53.4	19.6		9.1	58.6	56.4	
10	59.1	12.8		8.9	50.7	12.5	K	9.8	27.9	21.4		9.4	55.6	54.8		9.5	25 6.4	1.6	
8.5	59 4.6	37.2		9.5	50.9	35.7		10	30.5	52.7		9.8	18 0.3	9.5		9.2	36.0	24.2	
8.9	9.3	31.7		9.8	53.3	50.5		6.3	31.6	8.7	B	9.4	5.4	0.3		9.3	38.8	24.4	
8.8	18.5	15.4		8.8	59.1	14.9	K	9.5	41.2	59.5		7.0	10.7	17.3	K	9.6	38.8	1.0	
10	21.6	26.3		9.8	5 9.4	52.8		9.3	42.0	47.2		9.7	21.4	37.8		10	50.5	24.4	
9.6	25.6	38.4		9.1	12.8	27.3		9.6	42.4	39.9		9.8	33.1	38.0		9.3	53.0	22.4	
9.3	29.9	36.9		9.5	24.1	41.4		9.6	49.6	9.3		9.4	36.2	8.2		9.0	26 13.1	28.0	
8.8	31.3	52.1		9.4	24.5	29.9		10	50.5	24.1		9.7	37.5	56.0		9.5	24.9	32.0	
9.8	35.5	8.2		9.1	31.9	26.1		10	53.2	17.3		9.8	42.6	26.8		8.5	28.6	58.1	K
9.2	36.5	48.4		9.6	36.5	40.5		9.3	12 1.4	39.0		9.7	19 13.4	29.1		9.4	29.0	21.7	
9.3	39.8	24.2		9.8	36.5	57.9		8.8	2.4	31.7		9.8	23.6	54.1		7.8	30.2	14.8	K
8.3	39.8	42.1		9.4	52.0	34.2		9.6	4.5	41.8		9.5	26.6	38.2		9.4	38.6	26.8	
9.4	47.6	41.2		9.5	6 9.0	40.9		9.4	15.7	43.9		9.3	35.6	17.0		9.5	40.6	59.8	
9.4	0 0.1	13.6		9.3	10.9	9.6		9.4	25.0	52.8		9.8	43.7	51.3		9.0	50.5	51.0	
9.8	25.5	35.6		9.5	12.0	27.5		9.1	43.4	58.5		10	44.3	48.4		9.2	53.0	24.6	
10	32.4	28.9		9.5	14.2	38.8		8.8	54.1	22.5		9.1	48.4	25.9		9.6	27 6.2	34.0	
9.8	34.3	10.9		7.7	18.6	16.8	K	7.0	13 5.4	24.2	Sj	9.3	49.8	10.6		8.5	27.4	45.6	
8.9	45.9	54.6	Sj	9.3	21.9	1.4		9.3	8.9	5.6		6.0	52.0	3.5	Sj	9.3	29.4	24.5	
9.5	50.5	23.0		9.1	29.9	42.1		9.4	16.6	54.1		10	55.4	27.6		9.7	44.5	51.0	
8.9	58.0	32.1	K	9.7	31.1	49.8		9.5	22.0	36.1		10	56.0	17.9		9.0	59.2	1.5	Sj
9.8	1 13.8	24.0		9.1	32.1	43.4		10	40.3	4.0		9.3	56.6	52.7		9.7	28 9.8	5.9	
10	15.2	45.1		9.4	37.1	34.9		9.6	42.8	23.2		9.8	57.3	37.0		9.4	13.5	50.2	
10	17.1	46.2		10	43.4	37.6		9.6	14 0.0	58.2		10	20 1.0	16.8		9.5	29.0	24.5	
9.3	19.9	30.4		9.8	44.2	53.2		9.2	14.4	8.2		8.3	1.7	24.0		9.5	32.0	31.5	
9.8	26.9	4.9		10	7 7.8	28.5		10	20.1	49.1		9.2	7.9	16.8		9.5	33.4	15.8	
8.9	44.1	37.7		10	8.9	42.3		9.6	20.8	24.4		10	15.9	8.5		9.4	40.9	35.5	
9.7	48.6	2.3		10	21.7	24.0		10	23.5	31.7		9.5	29.8	6.4		9.8	43.2	50.4	
9.8	54.1	14.7		9.6	33.0	30.9		9.5	33.7	20.3		9.2	32.5	40.3		9.1	44.5	33.6	
8.6	59.2	19.8		10	8 1.3	20.3		9.3	34.9	34.8		10	46.8	16.1		9.1	48.0	32.0	
9.4	2 20.4	6.7		8.8	10.1	59.6		10	39.9	56.1		10	47.0	52.1		9.1	52.8	8.4	
9.5	21.5	57.9		9.8	27.9	42.8		9.4	42.0	54.3		8.8	55.2	17.5		9.4	57.9	14.7	
9.7	25.9	43.2		9.7	35.2	51.4		9.8	44.6	21.9		9.6	21 0.8	53.6		9.0	29 10.8	45.9	
10	42.3	50.6		9.8	49.1	32.8		9.8	52.1	24.0		9.8	1.6	44.7		9.8	12.0	54.7	
8.7	52.6	28.5		9.4	49.5	0.7		10	15 6.3	24.9		9.8	11.9	58.3		7.8	33.2	38.8	K

2601—2660				2661—2720				2721—2780				2781—2840				2841—2900			
	8h		—12°		8h		—12°		8h		—12°		8h—9h		—12°		9h		—12°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.8	29	34.4	33.8	9.2	38	43.1	44.8	9.0	46	10.7	39.6	K	9.0	57	59.1	27.0	M	7.5	8	45.4	31.6	Sj
9.8	30	3.8	6.5	9.8		43.5	18.4	9.4		13.1	3.8		9.1	58	11.0	7.0		9.4	9	0.7	10.4	
9.4		20.3	35.4	8.0		53.1	45.4	K	10		35.4	54.4		9.8		13.7	55.1		9.5		5.8	22.0	
9.4		20.7	28.1	8.8		54.3	8.4		8.5		57.8	44.4	K	8.3		19.5	31.4	K	9.8		28.1	17.8	
9.3		30.4	47.6	9.1	39	0.2	42.0		9.3	47	7.5	18.2		8.5		24.2	20.4	K	9.2		46.1	41.7	
9.2		33.7	6.6	9.1		16.4	56.5		9.4		13.7	12.7		9.0		30.1	47.3		9.8		46.6	51.9	
6.7		42.8	5.0	Sj	9.5		34.6	9.3		9.2		52.6	51.1		9.7		39.6	46.5		9.1		51.9	26.9	
9.2		51.0	25.2		9.0		38.3	3.1		9.5		58.0	2.5		10		39.7	54.8		9.1	10	13.5	51.8	
7.8		56.7	1.6	Sj	9.2		51.2	49.6		8.9	48	30.3	46.0		9.4		46.6	30.8		9.2		15.7	9.4	
7.3	31	0.8	11.7	K	9.1	40	18.0	40.3		8.7		31.2	17.3		8.7		47.1	20.4	K	9.1		49.0	47.3	
9.1		8.4	52.6		8.3		18.9	32.2	K	9.7		33.8	48.7		9.0		59.7	53.1		9.3		51.2	38.2	
9.2		14.3	11.9		8.7		31.0	56.9	K	10		44.2	28.3		9.1	59	7.0	38.6		8.8		56.8	46.7	K
9.2		29.8	9.6		9.5		33.3	7.1		9.3	49	2.7	59.8		9.8		21.9	37.9		9.5	11	0.7	15.2	
10		31.0	57.0		9.0		35.8	41.0		9.4		6.9	20.3		9.5		30.6	21.4		9.1		7.9	56.2	
9.8		37.1	27.5		8.0		44.4	59.5	K	9.8		18.3	2.9		9.0		35.0	13.7		9.4		12.8	13.5	
8.5		43.8	42.0		9.8	41	12.0	3.8		9.8		39.4	38.4		9.1		37.7	49.5	M	10		40.0	58.2	
9.1		48.1	47.6		9.5		18.9	11.3		9.4		42.6	7.5		9.5		54.3	30.1		9.8	12	14.0	48.6	
9.0		55.8	45.4		9.3		27.0	50.0		8.5	50	5.2	16.2	K	9.5	0	3.6	16.7		9.9		17.2	32.1	
8.5	32	5.9	19.5	K	9.8		35.1	17.7		9.7		9.3	48.2		9.5		19.5	22.0		10		25.4	6.1	
6.9		23.3	13.3	K	9.8		36.5	38.6		9.7		11.8	43.7		7.0		20.6	43.7	K	10		38.1	39.7	
9.5		27.1	32.4		9.6		37.6	18.9		9.8		19.2	46.4		9.8		40.1	48.8		9.4		48.3	45.7	
9.8		35.0	27.7		10		47.1	54.4		8.6		27.6	19.3	K	8.7		41.7	6.1	K	9.4		48.3	47.8	
9.1	33	14.8	45.1		9.5		57.2	6.5		10		30.0	48.2		9.3	1	32.4	53.8		9.6		53.7	23.2	
9.8		27.9	3.6		9.3	42	5.5	35.9		9.5		31.1	7.1		9.7		35.2	31.3		7.0		58.5	41.5	K
9.7		36.8	31.1		9.2		7.9	17.7	K	9.5		32.0	59.8		10		35.7	6.9		9.9	13	12.4	58.2	
9.1		53.6	6.5	K	8.5		10.3	11.7	K	9.5		34.4	31.7		9.4		44.7	54.6		10		25.7	36.1	
9.5		58.3	37.4		9.2		12.7	7.0	K	9.5		34.5	32.6		9.0	2	8.0	18.1		9.5		35.2	16.3	
9.1	34	8.2	38.9		8.7		13.9	28.8		9.7		49.2	31.3		9.0		20.5	34.4		9.5		38.5	15.1	
9.8		31.4	31.7		8.5		14.3	52.5		8.9		55.7	31.9	K	8.8		22.3	15.1	K	9.2		46.5	0.2	
9.1		38.2	37.3		10		24.6	58.2		9.8	51	20.0	2.3		9.1		24.1	36.2		10		59.0	44.4	
9.3		39.5	58.5		9.4		26.1	27.5		8.8		49.1	36.6	K	10		29.2	26.7		9.1	14	7.3	12.2	
8.8		40.5	16.6	Sj	9.4		27.8	20.4		9.4		51.4	14.0		10		33.3	23.1		8.8		14.2	46.4	
9.5		49.9	7.4		9.3		29.7	31.0		9.7	52	1.2	45.2		10		38.1	6.0		10		19.0	43.9	
9.7	35	13.0	27.6		9.4		38.3	11.9		9.4		6.3	53.3		9.5	3	2.6	51.0		9.2		23.3	59.9	
9.5		13.0	14.5		9.8		47.3	39.5		9.5		32.8	23.7		8.9		11.6	32.5	K	9.5		25.1	24.1	
8.1		30.3	46.7	K	9.9		54.9	15.0		9.6		44.3	50.8		8.7		24.8	35.1	K	9.4		40.6	24.8	
10		34.0	55.8		9.3	43	21.6	32.1		9.1		53.4	40.3	K	10		56.7	34.1		7.5		55.9	55.2	Sj
9.8		40.1	55.9		10		22.8	42.0		9.8		54.7	17.4		8.2	4	0.1	4.0	K	9.0	15	11.9	51.1	K
10		44.7	31.5		9.7		26.5	38.2		8.8	53	25.2	50.7		9.9		8.2	44.9		9.5		35.4	8.4	
9.5	36	6.4	52.0		9.2		28.3	47.4		8.2		46.0	36.0	K	10		21.2	43.6		9.1		39.8	1.9	
9.5		13.6	4.8		9.3		29.3	46.9		9.6		52.3	28.8		10		25.6	58.6		9.4		51.5	49.2	
9.6		23.5	18.0		9.1		29.8	11.8		8.5		53.9	15.2	K	9.6		37.0	10.0		9.9		54.3	54.4	
9.7		27.4	19.0		9.4		37.1	18.8		9.8		57.4	46.3		9.5		44.1	23.5		10	16	42.4	1.7	
9.1		47.6	29.8		8.4		38.9	46.0		9.5	54	17.2	47.8		9.8		59.4	14.0		9.9		49.3	57.5	
9.8		48.8	47.5		9.4		59.9	49.8		10		48.4	28.0		9.0	5	10.9	49.1		9.7	17	2.0	37.9	
9.3		49.2	31.1		9.3	44	6.5	33.2		9.7	55	2.3	57.5		8.6		16.4	46.0	M	9.5		4.1	19.7	
9.8		59.5	17.6		9.5		20.3	11.6		10		8.1	46.8		10		21.3	28.8		8.5		19.2	14.1	K
9.2	37	1.1	42.1		9.4		56.8	10.3		9.5		25.6	8.7		9.4		44.3	20.8		9.0	18	2.4	40.3	
10		3.8	41.7		10	45	3.1	58.6		9.3		27.2	22.4		9.8	6	19.4	4.5		9.1		3.6	19.8	
9.1		10.0	20.4		9.1		4.3	45.2		9.4		46.1	12.5		9.6		21.4	37.8		9.4		26.5	22.0	
9.8		10.1	50.4		9.8		9.8	43.9		9.0		53.7	11.8		9.3		38.7	37.4		8.0		39.9	42.2	K
9.3		18.0	31.0		10		25.4	57.0		9.1	56	13.9	30.4		8.6		57.0	39.8	K	8.5	19	16.8	52.3	K
9.1		18.3	37.9		9.0		25.6	48.4	K	10		21.8	35.5		9.4	7	11.0	9.0		8.0		27.7	10.6	K
9.1		19.7	29.7		7.0		27.0	16.1	L	9.8		41.2	2.8		9.5		29.3	11.5		10		29.8	54.1	
9.2		28.9	55.7		9.8		30.0	36.3		9.8		55.3	56.4		9.6		35.7	28.3		9.4		31.4	35.3	
8.8		39.4	7.3		6.2		37.7	41.0	K	9.2		57.0	2.6		9.3		53.5	20.2		7.5	20	5.6	17.2	K
9.0		40.9	40.5		9.5		39.8	17.6		8.8	57	26.1	15.9	K	9.4	8	0.1	1.3		9.0		12.7	3.0	
9.1		43.5	28.1		9.4		44.7	16.2		9.2		39.8	28.7		9.8		6.8	22.3		9.1		22.3	53.8	
8.3	38	15.3	53.0	K	9.4		46.4	51.6		8.2		46.0	41.1	K	8.5		13.9	16.2	K	9.1		32.0	4.1	
9.5		29.4	8.4		8.5		46.7	30.3	K	9.4		47.2	37.2		9.2		36.7	35.9		9.8		58.6	10.0	

2901—2960					2961—3020					3021—3080					3081—3140					3141—3200				
	9h		—12°			9h		—12°			9h		—12°			9h—10h		—12°			10h		—12°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
10	21	1.2	35.0		9.5	33	13.2	24.0		6.8	47	32.0	15.1	K	9.4	59	48.9	0.2		8.5	13	0.2	22.8	
9.7		29.5	29.3		9.4		58.9	10.4		9.4		40.9	27.0		9.8		50.0	14.7		9.0		4.3	44.8	
9.9		33.9	38.8		8.1	34	0.6	26.5	K	9.5		50.1	10.3		8.8		53.8	11.1	K	9.0		13.9	17.5	
9.8		54.7	6.7		9.7		3.1	32.5		9.5		52.2	0.0		9.8	0	22.2	28.3		9.0		17.7	28.4	
8.2		57.6	56.3	Sj	9.2		13.2	17.5	K	9.4		52.9	2.2		9.0		25.9	30.9	K	9.0	14	22.4	22.3	
9.9		59.2	29.9		9.2		50.0	39.2		9.2	48	0.1	48.3		9.4		43.3	16.8		9.0		32.4	14.9	K
10	22	8.8	41.5		9.0		56.0	47.0		10		26.9	22.0		9.3		44.8	5.9		7.0	15	4.5	40.5	K
9.6		17.2	2.3		9.8	35	5.4	45.7		9.5		45.7	40.6		9.7		50.9	43.5		8.7		12.3	56.8	K
9.7		45.9	46.8		10		7.3	53.8		8.7		49.1	47.7	K	8.3		51.5	49.4	K	9.3		13.5	39.8	
10		46.5	51.6		9.6		7.8	56.0		9.8	49	20.3	28.7		9.5		54.4	47.7		6.8	16	12.4	38.5	K
9.0		48.5	45.5	K	8.3		8.2	15.8	K	6.8		29.7	46.7	Sj	10		55.7	53.9		9.8		19.1	30.5	
8.3		49.8	6.0	K	8.7		11.2	24.3	K	10		54.0	47.2		9.2	1	13.8	42.8	M	9.1		19.5	52.0	
9.0	23	18.0	6.0	K	9.2		14.0	30.5		9.2		57.9	14.5		9.1		17.6	21.0		9.8		19.5	35.0	
9.3		19.6	28.4		9.6		24.1	23.7		9.5	50	5.0	15.4		9.0		30.6	19.9	K	8.5		52.2	35.3	K
9.1		26.2	35.5		9.8		33.1	55.8		9.8		26.5	54.3		9.3		44.9	37.2		8.7		56.3	56.4	K
10		27.6	29.3		9.5		49.7	18.3		9.0		30.5	31.9	K	9.4		56.0	24.1		9.8		58.0	59.3	
9.1		57.7	52.8		9.8	36	4.8	57.1		9.3		49.0	43.4		7.8		57.9	29.3	K	10	17	10.8	21.0	
9.5	24	15.7	51.7		8.9		53.9	26.2		9.0		49.7	6.8		6.8	2	17.8	39.2	K	8.8		18.3	21.9	M
9.5		21.7	0.2		9.0	37	20.9	47.6	Sj	7.3	51	6.2	26.2	K	10		40.3	6.1		9.3		45.0	57.8	
8.5		38.3	26.0	Sj	9.5		22.7	2.0		9.5		29.6	33.8		8.8		51.7	10.0	K	9.0	18	16.5	24.0	K
9.1		51.3	26.3	Sj	9.0	38	16.5	33.4		9.0		30.4	36.5	K	5.8	3	1.8	6.2	K	7.5		19.9	1.7	M
9.4	25	4.7	23.6		9.6		46.1	20.7		9.2		34.5	45.6		10		7.9	31.8		7.3		45.2	24.0	K
9.2		11.2	16.7		8.5		59.7	34.4	K	9.2		36.6	3.0		9.0		17.2	48.6		9.1		56.4	10.0	
9.0		52.3	37.4		9.4	39	2.2	11.7		9.5		53.7	37.4		8.4		41.7	9.1	K	9.8	19	6.8	19.2	
10		52.9	56.8		9.6		6.3	54.5		7.5	52	11.6	3.8	K	10		47.1	55.8		9.9		20.4	38.0	
9.0		57.9	52.5	K	9.3		12.6	20.0		8.9		39.5	47.6		9.7	4	15.9	36.1		10		37.6	51.8	
8.5	26	18.3	33.1	K	10		27.2	8.2		9.6	53	7.8	30.5		9.7		37.2	47.7		9.2		58.7	48.0	
9.4		50.4	16.8		9.4	40	23.8	7.0		9.6		9.6	37.9		8.5		55.1	51.0	Sj	9.8	20	22.5	27.4	
9.5		50.8	52.8		10		23.8	28.4		9.0		33.4	55.7		9.8	5	16.3	4.4		9.1		36.1	55.3	
9.4		50.9	51.0		8.9		37.8	51.0	Sj	9.5		45.2	30.5		9.4		24.1	20.1		9.3		38.2	2.9	
9.3	27	6.2	14.2		9.4		41.3	7.2		9.5	54	28.0	1.0		9.5		33.7	42.5		9.3		45.7	46.5	
9.3		14.1	52.8		9.5		58.5	54.3		9.5		30.9	7.0		10		34.2	41.4		9.1		47.0	57.9	
10		19.7	33.6		10	41	17.4	40.4		9.1		33.4	13.7		10	6	6.8	31.1		9.8	21	21.2	50.3	
9.5		25.3	35.8		8.8		20.8	50.7		10		33.4	49.3		9.7		19.8	25.5		9.5		46.5	3.0	
9.7		40.0	32.2		9.2		22.0	52.3		7.5		48.4	11.9	K	10		21.4	47.1		9.8	22	8.6	23.2	
10		48.3	54.1		8.9		25.7	30.1		9.5	55	12.0	46.0		9.8		31.8	33.6		9.8		25.4	27.6	
9.8	28	6.7	14.2		9.5		36.1	48.2		6.8		31.4	36.0	Sj	9.7		51.4	33.8		9.7		44.0	34.2	
9.4		15.0	25.6		9.6		45.8	54.5		9.5		38.3	19.3		10		53.0	53.6		9.6	23	14.2	46.5	
9.5		27.4	18.0		9.4	42	10.8	0.8		9.2	56	6.0	32.8		8.5	7	33.6	50.4	Sj	9.6		46.1	50.4	
9.5		47.2	28.1		9.0		12.8	46.1		9.2		10.4	36.1		9.8		45.8	21.2		9.5		46.6	54.9	
9.8		47.7	50.3		8.7		24.2	0.1	K	9.5		11.9	44.3		9.0		50.2	45.3		6.0		52.6	50.6	K
9.5		49.8	56.8		8.0		55.5	7.8	Sj	8.3		20.9	10.6	K	9.7	8	5.3	31.7		9.5		57.2	24.8	
9.0	29	11.4	13.6	K	9.0	43	50.7	44.6		9.5		34.0	45.6		9.8		26.5	52.0		9.3	24	3.8	38.1	
8.7		16.8	54.9	K	8.3		59.6	10.4		7.3		35.1	11.3	K	9.1		40.1	11.4		8.8		14.6	21.5	
10		27.5	13.3		8.6	44	7.2	51.4		9.4		39.2	36.0		9.8	9	3.1	25.7		9.3		26.2	47.2	
9.0		31.9	34.9		9.4		23.3	5.0		9.5	57	1.8	56.8		10		13.1	45.8		9.5		26.9	44.8	
10		38.7	39.5		8.8		26.1	14.6		9.4		16.5	38.3		9.4		34.8	35.7		9.4		39.0	51.6	
9.1	30	11.9	1.9		9.8		30.3	39.4		9.4		28.7	56.9		9.6		41.3	8.6		9.8		53.4	46.3	
9.6		27.8	19.7		9.8	45	9.2	52.8		10		36.4	38.8		7.3		41.5	22.8	K	9.7		53.5	32.2	
9.8		28.1	18.1		9.8		22.2	8.5		9.5		39.4	41.9		9.8	10	11.3	28.4		9.3		57.7	18.8	
8.5		40.6	39.3	K	9.5		23.2	47.5		9.1		49.6	59.1		9.3		35.6	6.5		9.8	25	31.2	27.3	
9.5	31	2.4	51.7		8.6		59.4	29.0	K	9.5		55.8	18.5		8.3		45.0	48.5	L	8.9		40.1	22.8	
9.0		9.5	52.3	K	8.5	46	10.3	51.7		4.5	58	4.7	21.9	L	9.4		53.9	50.5		9.5		47.3	4.0	
9.8		11.1	15.8		9.1		11.2	12.5		8.5		22.8	16.5	L	9.8		57.5	22.8		6.8	26	5.0	39.4	K
9.1		22.0	1.1		9.3		35.1	31.4		8.8		34.0	51.5		9.0	11	4.4	37.1		9.2		6.2	15.5	
10		26.1	38.5		9.8		40.0	11.6		9.3		34.5	25.2		7.0		18.0	34.9	K	9.3		7.1	18.7	
9.8		27.8	47.5		9.1		56.0	50.8		9.5	59	2.6	34.3		9.1		19.6	37.5		9.8		36.2	41.9	
9.8	32	22.6	13.9		9.5	47	2.2	3.1		10		11.2	57.8		9.5	12	8.3	16.6		9.8		56.6	21.1	
9.5		29.9	30.6		8.4		25.3	14.4	K	9.3		16.3	51.3		10		40.4	1.3		9.4		59.2	10.2	
6.8	33	3.2	20.5	K	9.6		31.7	37.9		9.1		32.7	56.1		9.8		51.5	18.0		9.4	27	21.7	11.1	

3147: 4ˢ.76 40′46″.9 B_2, Ep. 1873.22

3201—3260					3261—3320					3321—3380					3381—3440					3441—3500				
	10h		—12°			10h		—12°			10h—11h		—12°			11h		—12°			11h		—12°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.8	27	27.3	0.1		9.3	38	48.6	55.9		8.0	52	54.8	33.4		8.5	7	59.5	10.0	Sj	8.7	23	14.1	30.4	
9.0		27.7	12.6	M	9.8	39	4.2	21.4		9.9	53	21.3	59.9		9.0	8	32.3	22.3		7.2		19.5	14.8	Sj
9.8		48.4	15.3		9.6		10.7	13.1		10		28.7	54.0		10		38.2	2.7		9.2		30.6	11.9	K
10		49.6	7.9		7.0		14.5	41.8	K	9.8	54	35.4	27.1		9.1	9	13.7	52.2	K	9.8	24	49.9	2.9	
7.0	28	13.7	6.2	K	9.0		25.6	47.9	M	9.8	55	8.1	38.7		10		28.0	43.0		9.1	25	7.7	44.6	
9.1		19.2	8.2	K	9.7		29.0	24.4		9.3		13.1	40.5		8.6		40.4	16.9	K	10		28.3	54.7	
10		23.6	31.7		9.9		49.6	57.2		9.1		17.3	19.4		8.9		50.1	21.4	K	9.6		30.0	43.8	
8.0		29.8	15.1	K	9.1	40	1.2	2.1		9.3		33.1	43.7		10		52.2	46.1		9.2		53.9	34.8	
9.4		36.1	13.8		9.8		23.7	27.6		9.6		40.3	32.4		9.4	10	20.0	56.0		9.8	26	5.4	8.4	
9.6		58.2	29.0		9.7		48.7	30.1		9.6		55.0	0.0		10		43.5	2.0		10		16.7	59.0	
9.3	29	6.7	38.7		9.3	41	12.9	58.7		9.3	56	1.7	34.9	M	8.8		46.0	13.4	K	9.1		25.5	5.7	
9.5		19.5	50.8		10		14.9	20.0		9.6		18.0	31.1		9.3		47.8	26.9		9.7		26.8	43.8	
9.0		29.8	43.4		10		19.7	21.0		7.0		22.6	39.4	Sj	9.0	11	0.3	35.5	Sj	10		46.3	50.3	
8.5		40.5	47.2	K	10	42	24.0	38.9		9.4		37.2	59.7		9.1		1.5	38.1		9.5		52.7	44.2	
9.5		52.9	27.1		9.8		37.0	56.7		9.4		40.7	44.0		9.6		4.0	1.9		8.0		55.0	3.8	Sj
9.4		58.4	52.8		9.0		50.7	35.3	M	9.4		53.2	49.1	M	10		26.7	40.1		9.1	27	14.2	22.5	
9.3	30	4.7	2.6		8.8	43	12.7	40.4	M	10	57	18.6	44.9		9.3		28.8	21.6		9.6		23.4	9.2	
var		23.6	38.1	K	9.1		19.9	40.0		9.7		19.1	31.9		9.6		54.2	22.1		9.5		32.2	26.5	
8.0		45.6	11.5	K	9.8	44	5.7	14.8		8.8		38.1	29.6		9.9	12	1.4	58.3		9.4		47.6	30.5	
10		46.7	45.3		8.0		9.8	3.4	K	9.6		53.6	56.4		10		18.7	19.7		9.4		51.7	53.9	
9.7		52.2	23.3		9.2		41.6	15.5	M	9.9		58.8	27.0		9.1		26.1	39.5		9.1	29	24.6	56.1	
9.1		55.1	12.1		10		48.4	41.9		9.8	58	40.7	21.8		9.5		35.3	8.4		9.9		53.4	10.0	
9.3		57.7	46.0		9.4		50.0	7.9		8.0		58.3	17.1	M	10	13	6.7	49.0		9.5	30	25.3	8.4	
8.8	31	29.4	59.9	K	9.0		57.0	35.2		9.8	59	8.2	10.9		9.8		26.0	32.0		9.5		38.6	44.0	
9.8		30.3	8.6		10		58.9	7.3		9.7		15.7	8.5		9.2	14	24.4	5.7		9.0		46.7	23.3	K
9.4		42.9	15.8		9.1	45	3.0	59.9		8.0		16.3	38.0	Sj	10		28.1	45.7		5.2	31	18.6	23.8	K
9.9	32	8.2	20.9		9.7		7.6	26.3		9.0		16.4	37.6		9.7		29.7	23.0		8.8		46.5	36.7	K
7.5		27.3	14.5	K	9.6		13.9	38.0		6.3		26.7	13.1	L	9.6		32.0	31.6		9.8		59.7	46.2	
10		37.5	26.8		10	46	11.4	36.7		8.5		59.5	52.7	L	8.0		41.7	25.1	K	9.9	32	6.6	15.1	
8.6	33	0.8	39.0	M	9.1	47	1.1	23.7		9.5	0	54.4	36.4		9.8		52.4	1.9		7.0		8.8	22.4	K
9.9		16.2	36.0		9.5		1.2	54.7		9.1	1	21.3	6.2		9.3	15	1.8	25.4		10	33	17.7	40.7	
10		16.7	41.7		9.1		6.5	16.3		9.8		30.0	48.2		9.2		11.0	28.1		9.4		58.6	42.8	
8.2		16.9	31.4	K	6.3		6.6	59.4	K	8.3		44.2	26.9	K	10		26.0	35.8		8.9	34	9.2	38.8	
9.8		24.6	35.6		9.0		9.5	20.4	K	9.6		44.3	23.5		9.7		37.6	58.8		10		33.7	41.5	
8.7		24.8	45.2	Sj	9.1		28.4	11.9		9.8	2	24.2	25.0		9.4		43.1	50.1		10		33.8	17.5	
9.0		46.0	20.3	K	9.8		57.4	45.1		9.5		36.6	10.7		9.6		43.6	58.7		9.5		45.9	9.5	
8.0		46.8	22.8	K	9.6	48	7.0	17.5		9.0		39.8	21.5		8.6		57.3	6.1	K	8.3		58.8	25.2	K
10		46.8	55.0		8.5		15.3	39.6	K	9.0		53.1	13.2	K	9.8	16	21.8	35.1		9.8	35	10.0	42.4	
9.4		50.2	34.9		9.5		19.4	47.7		9.0	3	8.5	23.0	K	9.3		30.5	46.8		9.6		14.4	13.5	
9.3		52.0	1.7		9.3		35.4	56.0		9.7		11.3	16.3		8.9		45.3	35.0	K	10		33.1	40.6	
10	34	8.8	0.0		10		38.9	59.3		10		11.7	26.4		8.5		57.2	6.8	K	9.5	36	39.9	19.7	
9.4		42.1	37.5		9.8		41.8	47.2		7.5		34.4	19.6	K	10	17	29.7	39.6		9.0	37	28.0	54.7	K
9.3	35	7.8	6.7		9.8		51.5	24.1		9.5		50.9	58.3		7.0	18	35.9	57.3	K	9.8	38	23.7	44.5	
9.8		21.2	46.5		9.9		59.6	55.0		9.8		57.5	11.9		9.8	19	6.8	1.4		9.1		33.4	5.0	
9.8		52.5	29.5		9.9		59.6	53.5		9.8	4	0.8	30.7		9.5		12.6	20.5		9.9		49.9	56.8	
9.6		59.8	0.0		8.6	49	12.0	1.4	K	9.7		20.9	39.3		9.0		17.0	52.0		9.7		50.5	31.5	
9.3	36	13.3	17.8		9.8		36.5	7.3		9.5		33.2	2.1		9.5		20.0	58.9		9.8	39	5.7	21.3	
9.4		13.5	31.5		10		37.3	47.9		9.0	5	6.1	3.2		9.4		21.7	14.0		10		31.5	42.8	
9.5		15.7	36.7		9.7		58.0	15.8		10		9.4	57.4		10		28.1	16.7		9.1	40	9.3	13.5	
9.6		16.4	43.2		9.7	50	27.6	1.5		10		30.3	20.9		10		30.9	39.1		10		21.0	33.4	
9.4		44.8	21.7		9.3		31.7	31.5		9.5		39.5	12.1		9.5		39.2	35.8		9.8		46.3	33.3	
8.8	37	1.2	1.7	Sj	9.2		50.3	50.9		9.4		46.6	4.2		8.2	20	18.0	18.2	K	9.8		50.5	21.2	
9.4		56.1	0.2		10	51	1.8	28.4		9.7	6	1.6	51.7		9.8	21	13.4	58.6		9.7		57.7	25.7	
9.8		59.7	19.4		9.4		29.8	3.5		9.9		18.5	10.3		9.5		19.6	9.0		9.5	41	3.2	12.5	
9.2	38	2.6	9.5		9.7		39.5	55.4		9.2		29.4	12.3		10		41.8	36.2		9.7		20.9	43.5	
10		6.6	50.4		8.9		43.3	10.7	M	8.2		46.3	0.4	K	9.8		48.7	54.8		9.2		24.3	29.6	
10		24.6	47.0		9.8		56.2	44.6		9.6		46.3	30.8		9.6		52.1	14.9		9.2		40.1	26.0	
9.0		28.1	51.6	M	9.8	52	6.1	28.9		9.8	7	20.8	58.5		9.8	22	43.5	12.0		10		50.3	42.5	
9.5		28.4	0.4		9.0		36.6	34.6		9.5		46.4	16.7		9.3	23	1.9	50.2		8.4	42	4.1	0.4	K
9.7		37.4	35.9		8.9		50.2	17.9		9.0		56.8	30.2	K	9.7		6.6	12.3		10		10.4	36.4	

3218: sehr roth 3417: 56:61 5′59″.6 B_4, Ep. 1868.29

3501—3560

	11h		−12°	
m	m	s	′	
7.2	42	22.9	50.5	
10		33.5	6.8	
9.5		34.2	24.3	
8.3		43.3	38.0	
7.2	43	17.8	3.3	K
9.1		30.4	48.3	
8.3		39.9	53.0	
7.1		39.9	30.9	K
9.8		49.2	33.6	
9.2		49.8	37.5	
9.9		50.2	20.8	
9.9		52.4	29.1	
9.8	44	12.9	17.9	
10		53.7	50.5	
9.1		55.0	59.0	
9.8	45	3.1	14.3	
10		47.3	44.5	
10	46	21.0	52.2	
10		45.0	33.4	
9.8		45.2	6.7	
10		47.7	32.5	
9.6		49.8	0.1	
9.8		58.7	51.2	
9.5	47	34.1	10.9	
9.4		43.0	23.5	
9.1	48	33.1	6.4	
9.8		35.6	7.8	
9.8		44.0	15.4	
9.3		46.4	34.3	
10	49	4.6	45.8	
10		15.9	53.0	
6.7		31.8	56.7	K
9.3	50	9.9	19.8	
9.0		14.4	49.6	
9.3		15.3	56.2	
9.3		15.9	45.6	
9.5		48.4	21.4	
8.8	51	5.1	57.6	K
9.0		43.3	19.2	
9.5		47.8	25.6	
9.2		51.6	46.8	
9.8	52	21.7	26.5	
9.1		40.2	23.4	
9.3		54.3	43.3	
9.6		55.6	32.5	
9.7	53	49.5	0.7	
9.5	54	6.7	27.5	
9.8		24.5	2.2	
10		34.7	27.5	
8.9		46.2	36.9	
9.4	55	15.7	38.3	
9.8		23.9	3.8	
9.0		33.1	16.1	
9.4	56	29.6	28.0	
9.7		46.9	53.8	
9.5		57.2	19.0	
9.4	57	2.2	16.3	
9.4		8.8	13.7	
9.2		15.5	1.4	M
8.7		22.8	56.4	K

3561—3620

	11h—12h		−12°	
m	m	s	′	
8.0	58	35.7	30.5	K
9.5		47.6	16.4	
9.5	59	18.1	17.2	
9.5	0	8.3	6.7	
10		9.9	21.1	
9.6		21.8	6.0	
9.3	1	46.5	11.8	
9.1		49.6	13.6	K
7.7		55.7	7.6	K
9.9	2	11.9	15.0	
9.8		16.4	59.0	
9.5		30.5	40.1	
8.0		32.0	37.6	
9.2		45.4	16.7	
9.6		53.0	16.5	
9.5	3	1.0	52.9	
9.6		26.9	0.6	
8.8	4	8.3	53.3	K
9.4		21.0	17.8	
9.9		56.0	12.8	
9.5	5	7.0	18.5	
9.2		22.2	52.7	
9.5		26.0	17.2	
9.5		36.4	22.1	
9.5		52.3	11.5	
9.8	6	24.1	0.3	
9.6		39.4	21.5	
9.0		40.9	1.2	M
8.5		59.6	12.4	K
9.0	7	11.2	48.3	
9.4		26.0	41.8	
9.1		51.4	27.5	
9.2		57.1	38.5	
9.4		59.6	40.7	
9.1	8	28.8	3.8	
9.8		48.5	4.5	
9.4		54.0	59.0	
9.1	9	8.9	12.5	
9.1	10	0.6	34.1	
9.1		4.5	24.8	
9.9		29.1	4.5	
9.3	11	8.0	59.6	
7.7		31.9	44.0	K
9.1	12	4.0	38.6	L
9.5		9.3	16.3	
9.3		15.1	33.3	
9.6		18.5	15.0	
9.8		22.4	6.2	
10		38.6	31.5	
9.9		41.1	41.3	
9.2		41.5	44.1	
9.1		59.7	21.4	
8.0	13	22.5	2.7	K
5.0		27.5	45.8	L
9.8		30.7	19.5	
8.6	14	7.2	52.7	
9.3		12.0	49.4	
9.5		30.8	25.7	
8.8		31.7	51.6	K
9.1		37.9	41.3	

3621—3680

	12h		−12°	
m	m	s	′	
8.3	14	40.7	21.7	K
9.7	15	4.6	23.4	
8.8		16.6	18.5	K
9.5		36.9	22.5	
9.8		43.7	12.5	
9.6		44.9	18.9	
9.3	16	37.2	11.1	
9.4		54.1	49.0	
9.2	17	15.7	25.4	
9.5		18.4	42.7	
9.8		35.7	15.1	
9.4		38.3	36.9	
9.4		57.5	25.2	
8.6		58.9	32.2	L
9.5	18	7.6	18.5	
9.8		52.4	56.1	
8.2	19	2.2	59.4	K
9.1		8.6	43.4	M
9.8		40.3	31.8	
8.8	20	17.1	12.3	
8.8		20.7	47.7	L
9.5		49.3	4.0	
9.1	21	9.8	0.5	
8.5		36.0	30.0	K
9.5		54.4	13.2	
9.4	22	28.2	43.1	
6.5		30.7	35.3	Sj
9.1		36.9	10.6	
9.4		47.2	43.1	
9.4	23	11.6	47.9	
9.3		15.4	23.8	
8.5		58.7	46.0	L
9.8	24	34.1	2.8	
9.8		50.0	14.0	
9.9	25	10.7	54.1	
9.6		16.3	55.6	
9.4		25.4	58.3	
9.3		54.6	23.6	
5.4	26	3.2	1.6	K
9.1		11.3	4.7	
9.4		23.4	2.0	
8.8		31.8	6.4	L
9.8	28	31.6	46.9	
9.8		44.7	41.7	
9.3	29	14.8	23.7	
9.3		19.5	34.2	
9.5		40.0	35.5	
9.1		55.2	2.7	
9.2	30	55.2	14.4	
9.7	31	22.1	32.4	
9.0	32	26.2	5.2	
9.2		27.1	9.6	
8.9	33	17.4	35.1	
10		24.2	14.5	
9.8		43.0	13.0	
5.3		44.7	13.1	K
9.2	34	14.2	5.0	
9.0		54.1	14.1	
8.9		55.8	44.1	
9.6	35	14.8	27.4	

3681—3740

	12h		−12°	
m	m	s	′	
7.8	35	22.3	50.1	K
9.4		38.2	31.2	
8.9		41.1	15.7	K
9.3		46.6	15.5	
7.0	36	22.1	20.8	K
9.5		38.3	41.2	
8.7		48.3	54.7	K
9.5		48.9	29.7	
9.5	37	35.1	44.0	
9.7		44.8	39.7	
9.4	38	11.0	19.1	
8.8		51.7	36.2	M
9.8	39	10.2	52.5	
9.5		27.5	5.6	
9.2	40	14.4	24.9	
8.4		52.7	32.2	M
9.9		57.6	51.7	
9.4	41	6.0	15.3	
8.7		15.7	35.9	L
8.8		28.1	50.6	L
9.6		52.5	1.5	
9.5		55.9	6.4	
9.5		56.4	20.5	
9.1	42	27.0	23.2	
8.6		30.9	16.3	K
9.4		53.4	6.2	
7.3		54.4	14.5	Sj
9.5	43	16.1	39.1	
8.0		52.6	41.4	B
9.4	44	42.4	40.5	
9.1		48.5	58.7	K
8.8	45	32.4	30.9	K
10		42.5	7.0	
8.3	46	5.9	51.5	K
8.0		51.8	8.6	M
10		54.0	45.4	
9.7	47	1.8	44.9	
9.7		27.2	45.6	
7.0		31.5	40.1	K
9.4		40.5	56.2	
9.3	48	5.6	46.8	
8.7		15.4	49.4	L
9.1		17.5	10.6	
9.6	49	25.7	15.4	
9.8		55.6	21.3	
7.5	50	1.2	1.4	K
9.5		7.3	6.9	
9.5		8.8	34.4	
8.0		14.2	21.2	L
9.5	51	8.9	21.2	
9.4		13.7	29.6	
9.0		57.1	15.2	
9.4	52	7.3	37.6	
9.4	53	0.8	54.5	
9.3		9.2	29.4	
9.4		37.2	26.0	
9.1	54	8.3	52.8	
8.9		9.7	23.2	
9.8		20.5	9.3	
9.5		34.2	16.7	

3741—3800

	12h—13h		−12°	
m	m	s	′	
8.8	54	48.7	4.7	
9.2	55	28.7	2.2	
8.5		45.9	12.0	K
9.4		59.0	27.5	
8.9	56	0.4	36.0	K
9.8		31.4	7.7	
9.0		51.1	29.3	
9.5	57	23.5	38.8	
9.4		31.9	2.2	
8.7		34.4	0.0	L
8.5		58.4	0.4	K
9.6	58	11.4	15.8	
9.4		12.2	8.0	
9.4		18.8	23.5	
9.1		34.9	58.5	
9.5		41.4	27.9	
9.3	0	2.8	49.3	
10		7.2	22.8	
9.6		22.3	23.9	
7.8		28.7	20.8	Sj
9.4		47.4	44.4	
8.2	1	20.3	40.2	K
9.4		41.2	52.3	
9.4		52.4	26.1	
9.8	2	1.8	46.4	
9.3		14.8	38.0	
8.5		34.8	18.7	M
9.5		51.7	23.9	
9.8	3	18.7	13.0	
9.9		28.3	16.5	
9.9		30.8	16.2	
8.3		50.2	13.5	
9.3	4	12.7	41.1	
9.5		16.2	11.2	
8.5		20.7	49.1	L
9.8		32.0	26.4	
9.3		51.9	28.0	
9.9	5	16.1	6.7	
7.3		42.4	41.7	K
9.6	6	5.9	18.8	
9.4		50.2	25.8	
9.3	7	4.6	16.1	
9.8	8	4.1	52.9	
9.9		59.0	12.6	
7.0	9	19.7	23.8	K
9.5		33.1	30.0	
9.6	10	50.5	11.4	
9.4	11	8.5	54.9	
8.3		10.7	25.8	
9.4		39.5	27.8	
9.3		41.5	6.3	
9.8		52.0	20.4	
9.3		53.0	6.1	M
9.2		57.8	28.0	
8.7	12	38.4	25.8	M
9.0		49.5	3.5	
9.5	13	51.4	35.9	
9.7	14	39.3	34.8	
9.1		39.9	45.3	
9.8	15	3.0	2.1	

3801—3860				3861—3920				3921—3980				3981—4040				4041—4100			
	13h	—12°			13h	—12°			13h—14h	—12°			14h	—12°			14h	—12°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	15 4.5	25.1		9.2	31 34.8	34.6		9.4	48 11.5	42.1		10	2 26.2	34.8		9.6	17 22.5	6.7	
7.4	4.9	25.6	K	9.2	32 0.9	30.5		10	17.5	31.6		9.7	27.1	16.8		6.7	26.4	42.1	K
9.8	6.8	11.5		9.7	10.0	9.9		9.7	28.3	33.1		var	33.2	36.5		9.4	29.6	51.7	
10	13.9	2.6		9.7	18.9	54.4		9.5	41.6	58.2		9.5	38.3	28.4		9.4	29.9	26.1	
9.4	15.4	30.9		9.5	19.1	56.8		9.0	49 30.1	45.5		10	38.7	8.8		9.5	36.4	38.9	M
9.8	37.9	4.6		8.8	31.1	11.3		9.5	34.4	54.1		10	46.4	26.3		9.7	40.5	3.8	
9.1	47.4	54.2	K	9.0	50.2	11.9		10	50 1.3	51.0		9.8	57.4	1.5		9.0	44.5	8.2	M
8.5	59.9	53.3	K	9.4	33 12.9	5.3		10	21.3	49.7		10	3 0.5	8.4		10	18 30.5	0.9	
10	16 36.4	10.0		7.3	16.4	2.6	K	9.5	51 0.3	50.7		10	1.2	29.4		9.8	45.5	59.8	
9.3	17 6.9	34.4		8.8	34 14.4	17.8	M	9.4	13.2	57.5		9.5	2.4	27.3		9.0	19 3.7	14.7	K
10	7.6	27.7		9.2	18.9	5.4	M	9.5	33.4	1.6		10	11.5	10.7		10	12.8	39.9	
8.5	31.3	33.8	K	9.4	19.6	3.9		8.8	52 20.1	0.1	K	10	14.9	50.0		9.5	22.9	8.0	
9.8	32.8	24.1		8.8	43.7	49.6	M	8.0	20.8	45.3	L	8.8	20.2	37.2	M	8.8	27.6	47.5	M
8.5	18 40.4	18.0	K	9.3	46.8	48.9		10	30.5	48.0		9.9	37.8	57.6		9.0	50.8	44.4	K
9.0	19 1.3	16.3	K	9.5	35 9.2	57.0		9.2	57.4	52.4		9.4	57.3	14.9		6.8	55.1	42.0	Sj
9.3	17.3	12.2		9.3	14.4	21.3		9.5	53 1.5	50.7		9.4	4 18.8	4.3		9.1	20 18.2	25.1	
7.7	35.2	33.4	L	9.2	20.4	29.1		10	8.2	28.1		9.1	54.5	30.9		9.9	27.9	16.8	
9.0	47.3	13.0	K	8.9	36 8.8	24.7		9.4	13.5	33.8		10	5 16.1	37.0		9.8	28.6	22.4	
9.5	49.8	25.2		9.1	23.3	39.4		10	35.2	51.2		9.8	30.2	46.1		9.9	48.2	44.9	
9.0	20 0.7	33.4	K	8.3	29.3	5.5	K	9.1	36.6	12.2		10	44.3	23.1		9.4	58.7	57.0	
10	7.3	23.0		8.8	33.3	12.6	K	9.6	37.0	4.9		8.5	44.5	15.0		9.5	59.0	8.7	
8.5	19.2	49.4	K	9.1	50.4	29.9		9.5	49.0	11.9		10	58.5	11.1		9.4	21 24.8	19.3	
9.7	43.7	4.8		9.8	37 6.4	31.2		10	54.3	45.8		8.2	58.7	39.5	K	9.2	40.9	1.4	
9.3	22 7.2	55.6		10	23.8	16.5		9.4	55.1	30.8		10	6 20.3	21.4		9.1	22 12.8	32.6	
9.1	36.1	36.0	K	9.8	31.3	16.7		9.6	54 54.5	56.1		9.5	21.1	42.5		10	19.0	28.5	
9.3	41.8	10.3		9.3	55.8	16.5		10	55 5.2	56.4		10	44.5	10.2		9.8	30.6	43.7	
9.7	43.5	0.7		8.7	38 6.7	14.2	K	9.5	10.3	1.0		9.4	48.1	55.6		9.5	39.4	16.9	
9.3	23 10.2	2.7		9.5	9.8	3.8		9.6	17.6	3.5		9.1	7 1.2	12.9		9.0	53.8	57.7	K
9.3	28.2	7.6		9.8	17.1	54.0		9.5	52.0	23.8		9.4	3.7	17.5		9.3	57.2	45.9	
6.8	31.8	42.0	K	9.7	32.8	46.1		8.7	54.9	35.5		9.5	38.6	39.1		9.4	23 1.9	27.0	
9.2	53.4	32.9		9.4	38.3	16.0		9.0	55.5	19.1		9.5	8 46.3	4.8		9.8	3.9	1.2	
8.7	54.6	5.4	K	9.7	42.2	3.0		7.8	56 14.6	2.9	K	9.1	52.6	38.2		8.8	13.8	49.3	K
9.8	24 32.7	25.0		10	52.8	0.0		9.5	59.8	45.9		9.5	58.3	19.4		9.0	33.3	58.0	K
9.7	25 5.6	58.1		9.5	57.3	17.2		9.9	57 15.5	14.3		9.0	58.5	49.9		7.8	55.1	32.7	K
8.6	21.1	46.0		10	39 0.1	56.8		9.3	28.1	56.5		10	10 1.1	29.1		9.4	56.2	58.0	
8.3	25.5	26.7	K	9.7	0.1	25.3		8.0	58 5.5	0.2	K	9.5	14.8	50.5		9.8	24 5.8	22.5	
9.4	25.6	52.9		8.7	20.2	23.1	L	9.3	8.3	34.6		9.8	29.2	12.7		8.4	6.1	4.6	
9.6	26 33.3	16.8		8.7	38.3	10.7	K	7.8	10.0	22.6	K	4.8	11 16.5	41.7	L	10	16.2	52.9	
9.2	40.1	1.2		9.6	47.7	33.3		9.9	25.4	8.0		8.7	21.0	45.4	L	8.5	40.8	21.6	K
7.9	46.8	35.8	K	9.4	59.2	37.8		10	41.7	14.9		9.5	32.5	51.2		9.5	49.3	7.5	
8.8	48.6	41.4	K	10	40 18.8	35.4		9.8	59 23.9	21.4		9.3	12 4.0	34.9		9.2	51.7	50.0	
9.1	50.0	42.0	K	9.2	35.2	49.2		9.8	32.2	21.0		9.8	19.1	25.4		9.5	53.1	8.7	
5.7	58.3	28.0	L	9.9	52.2	28.8		9.5	51.1	47.6		9.5	42.4	47.6		9.9	25 2.2	43.6	
10	27 9.9	56.9		9.5	41 52.1	27.1		10	56.9	59.2		10	13 10.9	35.1		9.0	43.1	53.8	M
9.8	25.5	14.8		9.8	59.6	39.8		10	0 9.2	35.1		9.6	15.0	15.7		9.6	26 11.2	49.8	
10	27.2	38.7		9.8	42 5.2	20.2		7.0	15.4	14.1	K	10	43.5	20.9		9.0	14.7	36.1	K
9.7	50.9	25.6		7.3	36.7	23.0	K	8.8	20.4	40.7		9.0	48.4	50.1		8.7	15.9	50.4	K
8.3	28 5.0	44.1	K	9.5	40.0	49.4		9.5	28.9	5.7		9.0	14 0.0	22.6	K	9.8	16.8	3.5	
9.5	31.3	3.7		9.2	43 5.1	35.4		9.1	58.8	53.3		8.7	0.8	31.3	K	9.0	43.8	16.2	
8.8	45.6	25.3	M	7.0	20.3	57.6	K	9.3	1 0.6	34.9		9.8	46.5	14.6		9.3	27 10.3	17.0	
9.4	50.6	0.6		10	50.9	11.9		9.7	7.3	34.9		10	15 18.0	36.6		8.5	16.7	6.0	Sj
9.3	52.0	38.4		7.0	51.2	17.6	K	9.5	25.8	28.1		9.4	44.5	18.5	M	9.0	45.2	48.8	M
9.5	29 4.1	47.4		9.8	55.0	56.8		10	43.0	55.7		9.5	45.1	2.5		9.7	56.0	32.2	
9.5	22.6	35.0		9.6	44 33.8	44.2		9.5	56.8	55.0		9.1	49.6	15.4	K	9.8	57.7	41.0	
9.5	33.0	40.3		10	45 21.3	31.8		10	2 0.8	55.8		9.7	51.2	27.7		9.3	28 42.8	8.9	
8.3	30 44.9	49.1	K	9.8	21.7	11.7		10	5.0	34.8		8.2	52.1	19.2	K	9.4	59.2	17.0	
9.9	47.5	53.3		10	50.4	59.9		9.4	5.2	8.6		8.0	59.0	16.5	K	8.9	29 14.0	31.1	
10	31 2.4	49.4		9.3	58.8	35.2		9.5	11.7	9.0		10	16 10.1	15.5		9.3	15.2	13.2	
9.7	3.0	16.4		9.5	46 28.3	57.3		9.5	12.3	37.7		9.7	21.1	35.9		9.8	20.8	1.3	
10	31.1	20.8		9.8	37.1	25.5		9.0	21.8	40.0	K	9.5	53.0	22.7		9.0	31.7	3.1	K

3843: Schmidt (1866) var; UA var $5^1/_2$—$6^1/_2$

4101—4160					4161—4220					4221—4280					4281—4340					4341—4400				
	14h		−12°			14h—15h		−12°			15h		−12°			15h		−12°			15h		−12°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.1	29	59.3	30.2	K	10	46	24.2	39.5		9.4	7	6.4	2.8		9.3	26	29.0	15.6		9.9	42	1.1	51.2	
9.1	30	8.6	38.4	M	10	47	25.7	49.3		9.7		20.3	31.5		9.8		55.6	13.1		9.0		23.9	12.0	
9.9		12.1	25.1		9.5		38.8	21.0		9.3	8	2.5	18.5		9.3	27	0.7	32.0		9.9		29.2	49.3	
7.0		16.6	16.5	K	8.9		47.4	3.3	Sj	8.9		8.2	22.0	K	9.1		0.7	21.2		9.3		35.3	38.6	
8.6		19.0	26.0	B	8.5		52.2	36.8	K	7.8		33.3	40.8	K	9.1		3.2	20.3		9.3		36.2	43.7	
10		48.0	1.2		9.8		57.7	40.4		9.5		39.8	14.5		7.7		19.0	1.0	K	8.7		36.2	57.0	K
9.0		54.7	11.4	M	9.5	48	9.2	42.5		7.0		50.6	29.9	K	9.0		23.0	49.8	M	9.8		52.7	16.7	
9.8	31	3.5	57.0		9.7		13.7	39.9	M	9.8	9	16.3	54.5		9.6		32.5	57.6		9.6	43	0.2	13.5	
10	32	29.2	51.5		9.0		30.9	41.5	K	9.8		42.9	14.5		9.7		34.5	6.6		10		0.9	30.3	
9.7		41.2	26.7		8.9	49	18.8	20.5		9.8	10	23.5	15.4		8.6		47.2	22.3	B	8.2		19.0	11.0	K
9.6		56.6	27.6		10		23.1	49.1		10		25.1	8.5		9.9		52.9	56.5		9.8		33.0	55.8	
9.5	33	1.1	10.8		9.9		30.3	11.4		8.2		25.7	23.4	K	9.8	28	3.1	52.5		9.1		53.7	52.6	
10		14.7	10.7		7.5		42.4	3.1	K	9.6		59.2	31.6		9.9		4.6	29.4		7.3		55.3	5.4	B
8.3		39.7	5.7	K	9.3		45.8	15.7		9.6	11	14.5	55.6		9.7		39.3	51.3		10	44	10.7	56.2	
9.9		49.1	20.2		9.3		47.0	43.1		9.5		32.5	13.0		8.0	29	14.9	53.6	Sj	9.9		20.2	12.4	
9.3	35	20.4	45.5		9.6		54.1	47.8		9.4		38.3	16.8		10		19.5	29.4		9.5		45.2	58.6	
9.3		36.6	4.8		9.8	50	20.6	39.4		9.1		45.3	47.5		9.6		36.6	14.2		9.2		54.8	22.5	
10		40.2	52.5		7.8		47.3	11.0	K	8.0	12	10.8	39.7	K	8.8		44.5	37.3	M	9.9		55.3	48.0	
9.5		45.4	44.4		9.9		51.9	49.8		9.6		12.7	56.5		9.5	30	10.1	30.2		9.4	45	43.0	12.4	
9.2		45.6	17.2	M	10	51	13.8	51.6		9.7	13	23.4	11.9		9.4		13.6	32.4		9.2		48.7	45.0	
8.8		53.5	30.3	K	9.7		29.2	42.8		9.2		24.0	22.1		9.4		25.0	52.8		10		57.1	54.7	
8.9		59.0	24.8	K	9.6		32.0	16.5		9.8		59.2	59.3		9.2		50.6	31.9	M	9.5	46	9.4	31.6	
9.0	36	44.5	33.2	M	10	52	3.2	47.3		9.2		59.3	9.5		9.4	31	7.4	48.0		9.2		51.3	58.9	
9.5		48.3	36.4		9.7		5.7	24.3		9.2	14	35.8	7.3		9.5		28.1	30.0		9.8		51.8	0.2	
8.9		52.8	27.6	M	9.4		19.8	57.2		9.3	15	31.8	10.5		9.6		44.0	29.1		9.9		51.9	27.1	
9.5		58.1	24.5		9.4		50.0	56.1		9.0		49.3	32.3		9.3		46.9	20.1		9.2	47	13.1	1.3	
10	37	4.3	36.0		8.5	53	31.9	5.8	M	9.5	16	28.2	8.1		10	32	22.9	43.4		9.4		14.6	57.5	
8.5		22.0	21.7	K	8.9		36.5	45.2	M	9.8		30.7	27.6		9.5		28.3	24.7		9.3		23.7	46.5	
9.4	38	23.5	21.2		9.6	54	7.0	32.2		9.3		31.1	20.8		9.8		29.2	27.9		9.8		36.6	58.3	
9.3		49.8	36.5		10		11.7	50.7		8.5		31.6	22.7	K	9.8		53.4	49.0		9.8	48	11.8	32.5	
9.7	39	33.9	0.7		10		50.5	39.9		9.5	17	4.7	20.6		9.5	33	24.0	47.5		9.3		19.6	51.6	
9.4		45.1	8.0		7.3	55	11.6	17.3	Sj	9.5		35.6	51.4		9.3		26.0	13.6		9.2		36.3	29.8	
8.3		45.4	19.2	K	9.2		31.2	41.8		8.3		41.6	21.4	K	10		39.0	24.6		9.1		52.2	19.4	
9.0	40	1.0	13.6	K	9.0	56	31.1	19.0	K	9.8	18	13.1	5.6		9.4		39.4	42.5		9.0		53.7	32.3	
9.5		13.8	49.8		9.5		54.7	13.5		10		18.6	50.4		8.5		53.5	17.3	K	9.3		56.6	59.5	
9.5		51.5	8.2		9.1	57	34.3	55.8	K	9.4		20.0	58.0		9.2	34	2.8	59.0		10	49	0.8	48.9	
7.8		54.4	30.4	L	9.5	58	13.5	35.3		9.6		38.2	2.0		9.8		5.9	20.7		10		13.2	58.8	
8.6		59.5	10.5	K	7.0		37.6	20.4	K	9.6		46.8	32.6		9.1		52.5	34.9		9.3		24.8	10.8	
9.7	41	2.0	11.6		9.5		53.5	51.0		9.3	19	36.9	20.8		9.0	35	5.4	1.4	K	9.6		39.8	52.4	
9.5		25.8	41.4		9.5		55.8	36.0		9.2	20	24.1	35.6	M	6.7		6.0	35.2	B	9.3		41.5	2.3	
8.0	42	4.5	54.1	Sj	9.4		56.9	59.5	M	9.8		44.7	14.2		9.0		26.9	39.9	K	9.6	50	0.2	39.5	
9.3		5.0	9.0		9.2	59	6.8	22.3		8.6		55.2	13.2	K	9.2		42.9	15.0		9.5		9.4	37.2	
9.9		11.9	10.8		10		39.9	32.0		9.6	21	28.1	25.8		9.5		43.7	3.2		9.8		26.7	13.2	
9.4		51.9	34.4		8.2	0	24.0	53.2	Sj	9.5		58.1	5.4		9.5	36	33.3	56.6		8.4		53.6	44.9	K
9.0		59.3	44.6	K	8.5		51.6	38.7	K	7.8	22	1.0	16.4	K	9.7		45.3	33.0		9.7	51	3.6	56.5	
9.5	43	7.2	52.8		8.3	1	50.7	25.2	L	9.8		29.0	55.5		9.4		51.0	32.8		10		6.4	45.0	
9.9		40.2	45.6		9.4		57.5	34.2		8.3		35.5	14.1	Sj	9.6	37	28.7	29.6		9.2		23.6	34.7	
10		54.4	29.5		10	2	0.2	1.3		7.5	23	20.7	29.3	K	9.7	38	3.9	54.3		9.2		57.8	3.5	
10		58.8	35.1		10		5.5	54.4		9.5		31.0	32.8		9.1		15.4	23.6		9.5	52	8.5	48.0	
9.5	44	2.4	23.3		9.2		21.0	6.5		9.8		38.1	8.8		9.6		16.2	58.6		9.8		14.2	2.8	
9.3		11.0	8.8		8.5		23.5	45.0	M	9.2		54.8	18.5	M	9.4		25.9	32.2		8.4		17.1	42.2	K
8.0		17.7	54.1	K	10		55.6	40.4		9.1	24	13.5	52.1	K	9.5		46.9	34.8		10		31.0	51.4	
10		18.7	45.2		9.5		58.7	0.0		9.5		21.1	13.4		9.9	39	1.4	29.4		8.7		57.8	27.5	K
9.4		24.4	12.6		7.5	3	16.3	30.2	Sj	9.3		38.3	45.2		10		3.8	52.9		9.3	53	11.1	43.6	
9.5		33.4	7.9		9.0		24.3	19.9		9.8		55.0	11.2		9.6		32.6	23.7		9.0		24.6	42.3	M
7.8	45	0.9	2.4	K	8.8	4	5.9	42.3	K	9.4		55.6	0.4		9.0		48.9	17.0	K	9.8	54	1.2	31.5	
9.0		7.4	24.0		9.5		30.4	7.9		9.2	25	5.0	35.9	M	9.1		54.3	14.5		9.4		14.6	36.0	
9.3		28.7	51.9		9.1	5	45.8	57.4		7.2		14.7	30.9	K	9.3	40	9.4	24.4		9.3		34.5	6.1	
9.9		34.9	19.6		9.2		59.8	14.0		8.5		29.5	17.7	Sj	9.5		43.3	37.2		9.3		46.4	21.4	
9.9	46	21.3	25.1		9.3	6	22.9	16.0		9.3	26	25.1	35.1		9.8	41	42.1	7.7		9.3		47.1	30.2	

4401—4460

	15h—16h	—12°	
m	m s	′	
9.5	55 5.2	7.3	
10	42.6	40.0	
9.4	47.2	1.9	
9.6	56 12.6	34.5	
9.5	16.1	33.6	
8.8	19.5	57.7	K
8.8	31.7	58.2	K
8.9	32.0	48.5	
9.5	57 28.4	52.1	
9.7	32.9	26.9	
10	35.0	39.2	
8.8	35.3	19.2	
9.6	40.1	3.2	
9.8	58 31.0	29.3	
8.5	33.3	6.0	K
9.6	33.5	28.0	
9.4	36.4	49.5	
9.4	57.0	35.4	
9.5	59 13.5	39.2	
8.0	16.4	44.4	B
9.5	17.4	56.9	
9.1	18.3	28.3	
9.8	25.0	28.0	
8.2	29.2	33.3	
5.8	33.6	20.7	L
9.9	57.1	8.8	
8.5	0 0.5	36.8	
9.8	17.0	38.4	
8.5	20.4	44.2	
9.8	23.6	17.6	
9.1	33.9	21.4	
9.4	37.5	35.4	
9.5	42.6	14.0	
9.2	1 5.6	48.5	
9.9	10.5	52.2	
10	11.8	35.4	
7.1	18.5	39.9	L
10	29.4	51.6	
9.8	37.6	41.4	
9.4	48.5	39.7	
7.3	50.2	30.3	L
9.3	54.6	11.9	
10	3 9.9	26.6	
9.7	20.6	3.6	
8.6	27.0	4.8	K
9.5	4 3.5	11.0	
9.3	8.7	35.1	
9.0	50.3	48.8	
9.8	55.1	40.5	
9.4	5 6.1	42.7	
9.6	6.6	20.1	
9.5	30.3	36.2	
8.9	32.6	17.3	K
7.7	33.2	39.4	K
10	6 11.3	33.7	
9.4	16.6	18.5	
9.8	22.0	26.7	
9.5	23.8	19.5	
10	32.3	51.7	
8.3	7 2.3	51.5	K

4461—4520

	16h	—12°	
m	m s	′	
10	7 6.2	11.8	
8.6	8.5	22.8	
7.5	29.8	18.3	K
9.6	8 15.8	51.1	
9.9	18.0	5.3	
9.5	22.4	44.2	
9.5	24.6	5.2	
9.5	36.8	12.7	
9.0	41.3	10.4	K
9.5	9 1.2	47.5	
9.1	48.3	4.6	
9.5	57.2	13.9	
8.9	10 7.4	33.8	K
10	10.5	48.2	
10	36.7	56.9	
9.2	11 13.8	41.1	
9.8	16.2	27.0	
9.8	12 5.1	5.5	
9.0	15.4	27.0	
6.5	23.1	33.2	Sj
8.9	43.2	20.7	
9.4	44.0	15.6	
9.2	54.5	28.0	
9.7	13 7.7	0.6	
8.2	15.8	45.4	K
8.9	23.1	34.6	K
8.8	24.6	0.9	
9.1	40.3	13.4	
9.5	44.8	2.9	
9.0	53.0	34.7	K
9.0	53.7	23.6	
9.5	56.8	2.4	
8.5	14 29.1	4.7	K
8.5	41.2	51.2	K
9.4	15 15.6	38.7	
9.8	33.8	0.7	
9.3	16 1.7	42.3	K
9.5	11.0	31.4	
9.3	46.7	48.8	
10	46.8	27.6	
8.8	17 13.4	50.4	
9.8	13.8	29.6	
9.7	22.3	35.7	
9.0	36.6	20.2	
10	37.6	22.2	
9.4	52.1	10.7	
9.4	18 0.1	13.0	
9.0	27.1	15.9	
9.6	31.8	30.8	
var	40.2	5.5	
9.5	19 17.4	50.2	
9.5	42.7	35.5	
9.5	48.7	19.4	
10	50.5	10.1	
8.6	57.2	46.0	B
9.8	20 13.7	8.3	
9.4	20.8	1.3	
9.8	21 5.0	59.3	
9.6	25.7	31.6	
9.5	35.5	59.5	

4521—4580

	16h	—12°	
m	m s	′	
9.7	22 9.6	12.3	
9.6	13.6	3.1	
9.5	13.9	18.1	
9.8	33.5	17.6	
8.9	35.6	47.5	K
9.5	41.6	53.5	
8.3	44.1	48.7	K
9.3	23 15.0	11.9	
9.8	25.2	29.5	
9.3	28.6	56.0	
10	37.8	56.4	
9.2	24 1.5	56.9	
6.8	4.6	6.3	Sj
9.3	7.8	43.2	
9.1	18.1	8.6	
9.1	24.0	26.8	
neb	24.1	44.6	
10	32.4	35.2	
10	32.6	38.3	
9.5	34.8	12.0	
9.3	34.8	22.5	
9.5	56.5	16.0	
7.3	25 6.5	28.8	L
9.9	14.4	58.0	
9.8	18.3	32.6	
7.0	26.0	14.9	K
9.7	31.7	30.3	
9.8	54.6	35.7	
10	26 20.9	58.5	
9.4	27 26.4	59.2	
9.2	40.7	52.3	
9.5	42.4	49.4	
9.3	28 5.0	16.2	
9.8	5.0	47.4	
9.0	16.5	37.6	
9.3	20.0	16.2	
8.4	29 14.6	28.3	K
9.5	19.2	44.2	
9.5	26.4	0.0	
9.7	31.1	57.9	
9.5	58.9	7.4	
9.0	30 22.2	2.8	K
8.0	31 6.9	2.3	K
9.3	12.0	26.7	
9.0	59.1	58.9	
9.6	32 6.9	33.0	
8.5	19.6	28.6	Sj
9.7	22.3	24.5	
9.7	30.2	15.6	
9.8	38.1	32.3	
9.0	57.0	4.5	
9.8	33 14.7	52.0	
9.5	21.6	13.3	
9.1	58.0	9.6	
9.6	34 4.3	29.8	
9.2	13.9	24.0	
10	35.9	38.0	
9.7	48.2	37.1	
9.0	52.9	16.6	
9.8	35 34.3	8.8	

4581—4640

	16h	—12°	
m	m s	′	
9.5	35 37.2	22.3	
9.0	36 22.5	8.3	
8.2	23.8	0.1	Sj
9.6	48.9	17.9	
9.8	53.4	42.3	
9.0	55.3	12.8	K
8.5	37 6.1	13.1	K
9.8	7.2	50.0	
10	16.7	18.7	
9.9	41.6	39.5	
8.4	42.4	6.2	K
9.7	54.5	21.5	
9.9	38 6.3	34.7	
9.4	39 38.8	56.1	
9.6	41 22.1	57.7	
9.4	44.1	40.7	
8.5	51.7	49.2	
7.0	42 0.1	7.7	K
9.8	6.8	5.1	
9.8	31.9	41.2	
9.3	58.5	4.3	
9.8	43 0.1	16.2	
9.4	11.9	11.3	
8.1	18.5	26.9	Sj
9.5	38.7	44.2	
9.8	44 33.5	29.5	
9.8	45 9.1	50.4	
10	10.2	38.2	
9.5	15.7	20.1	
9.3	37.6	21.1	
8.9	45.8	47.7	M
9.1	51.1	6.5	
9.6	46 24.3	32.0	
8.7	24.6	53.6	K
9.5	25.3	25.1	
9.4	46.2	12.7	
9.0	47 39.1	19.4	
9.5	46.7	58.1	
9.8	48 0.1	16.8	
9.3	30.8	32.4	
9.5	33.8	32.5	
9.0	49.6	58.0	
8.0	49 22.3	0.0	K
9.4	22.4	19.6	
8.7	23.8	27.3	K
9.5	44.0	4.3	
8.9	50 11.1	24.2	
9.2	12.6	48.7	
9.4	53.5	43.2	
10	51 3.7	31.5	
8.0	7.9	58.3	K
10	9.0	47.3	
nova	22.5	40.0	
9.0	44.1	47.2	
9.4	52.7	32.1	
9.4	56.5	25.8	
9.6	52 21.8	2.5	
9.4	32.3	18.2	
9.3	44.5	9.8	
9.0	53 8.4	47.3	

4641—4700

	16h—17h	—12°	
m	m s	′	
8.7	53 8.4	0.0	
9.9	25.5	45.2	
9.0	54 2.0	14.2	
9.5	26.6	16.9	
9.5	34.5	51.1	
8.3	36.4	20.2	M
9.6	47.5	30.1	
9.6	55 13.6	47.2	
9.5	18.1	25.1	
9.3	18.3	12.1	
8.1	38.7	39.1	K
9.2	59.9	4.0	
9.8	56 20.0	15.0	
9.3	20.4	52.1	
6.8	23.2	27.9	K
9.7	30.5	33.4	
9.8	52.1	8.5	
9.5	57 6.6	7.6	
9.5	12.1	12.1	
9.8	26.6	14.4	
9.0	58 13.0	17.5	K
7.3	14.1	12.6	K
9.3	32.4	43.4	
9.0	57.3	50.6	
8.4	59 21.8	32.6	K
9.3	25.6	56.1	
9.9	29.2	57.1	
9.0	32.1	9.0	
9.5	59.5	9.4	
7.5	0 37.9	55.8	K
9.7	57.3	3.7	
9.4	1 3.3	28.4	
9.5	24.0	10.8	
9.3	32.1	11.5	
9.6	33.8	22.2	
9.0	37.4	43.2	K
9.0	42.1	6.8	
6.2	2 35.9	30.6	K
9.5	43.6	3.7	
9.1	3 51.5	11.0	
9.1	4 2.5	7.3	
9.3	4.4	23.8	
9.4	10.7	11.4	
9.3	28.1	32.8	
8.7	47.8	35.5	K
7.8	5 6.3	33.2	K
9.5	8.2	41.7	
9.0	9.5	44.9	
9.4	37.7	57.5	
9.8	54.6	44.0	
9.8	6 1.6	7.8	
9.2	7.9	16.2	
9.5	19.6	4.1	
9.2	20.5	11.0	
9.8	28.1	38.5	
9.1	51.9	17.8	
9.3	7 38.2	32.2	
9.8	8 12.7	37.8	
9.2	13.1	0.7	
9.1	13.8	46.8	

4633: Hind's nova 1848 4655: 22ʰ71 27′56″6 B_4, Ep. 1873.51
4690: Tempel (A. N. 95.2269) nebula planetaris

4701—4760					4761—4820					4821—4880					4881—4940					4941—5000				
	17h		−12°			17h		−12°			17h		−12°			17h—18h		−12°			18h		−12°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.7	8	15.3	8.5		10	21	37.6	49.3		9.0	36	10.8	8.5		9.5	50	28.2	6.9		9.9	3	20.7	16.7	
9.8		38.4	11.9		9.5		45.2	42.9		8.3		17.4	58.6	K	9.4		47.7	51.5		9.6		47.3	0.3	
9.5		49.0	28.1		9.7	22	0.1	42.6		9.5		26.4	59.1		9.5		56.2	48.1		9.8	4	2.5	4.2	
7.0		50.5	56.4	K	9.8		52.0	50.5		9.1		46.4	19.9		8.8	51	3.7	7.0		9.2		21.7	34.7	
9.3		54.0	11.3		8.9	23	18.0	54.0	M	9.3		49.6	39.0		7.8		35.3	20.4	L	9.5		36.7	48.3	
9.5	9	18.0	9.1		9.5		34.2	57.5		9.8		54.5	40.5		9.5		37.1	40.0		10		47.2	5.1	
7.0		44.3	9.1	K	8.5		52.0	24.9	M	9.1	37	6.4	58.6	M	9.4		37.5	28.3		9.5	5	0.6	19.3	
9.8	10	9.1	1.8		8.7		56.7	13.1	M	9.3		31.1	6.1		8.3		41.2	8.4	L	9.1		21.0	27.0	
8.7		17.5	7.1		9.3	24	1.9	3.3		9.8		56.4	24.0		8.8	52	1.1	39.1	K	9.1		29.5	55.0	
9.1		28.9	53.5		9.0		6.4	13.6	M	9.6	38	0.5	29.5		7.3		16.2	58.5	K	8.5		53.7	34.9	K
7.9		30.6	26.9	K	9.4		22.6	32.2		9.1		0.5	27.6		9.4		22.7	35.3		9.5	6	24.3	10.6	
9.0		39.2	23.1		9.2		25.5	24.0		9.7		35.6	41.7		9.4		49.7	9.7		9.3		24.9	41.9	
8.3		57.0	19.6	K	9.9		58.0	9.5		9.7		44.4	7.3		9.0	53	25.2	1.7	K	8.2	7	2.5	32.1	Sj
9.8	11	12.8	47.5		9.0	25	9.0	28.2	K	9.1	39	5.8	52.9		9.8		34.3	24.6		8.0		3.8	34.5	Sj
9.8		28.6	29.8		9.2		21.1	38.9		9.9		21.6	10.4		9.8		35.5	22.8		10		19.4	10.1	
9.3		48.8	48.2		9.8	26	13.9	55.0		9.4		27.8	6.5		9.6		36.5	19.5		9.4		24.8	56.2	
9.8		57.2	50.3		9.5		23.2	28.0		9.3		31.2	54.0		9.0		41.4	9.9		10		47.6	24.4	
9.1	12	1.7	59.8		8.0	27	9.5	14.6	M	9.5		33.9	24.0		9.3		49.8	57.1		10		52.2	24.3	
9.4		5.5	56.8		8.3		23.8	9.6	M	9.7		43.6	52.3		9.7		57.7	13.5		9.5	8	13.5	29.5	
9.3		8.2	2.1		9.8		20.9	2.9		9.1	40	0.4	6.6		8.8	54	4.9	9.3	K	9.7		34.9	37.3	
8.7		13.4	47.4	K	9.3		31.4	59.0		9.3		23.0	59.7		9.8		7.7	6.4		9.8		36.2	8.0	
4.5		39.8	41.4	K	9.1		55.8	11.9		9.6		34.0	51.9		7.5		14.2	18.5	K	9.5	9	6.1	31.1	
9.6		40.5	19.3		8.5		56.6	41.1	K	9.8		45.0	47.2		9.9		27.8	16.5		8.6		10.9	16.5	L
9.0		41.3	41.7	K	9.4	28	17.2	35.2		9.2	41	1.4	56.1	M	8.8		32.7	20.9	K	9.3		15.5	21.4	
7.8		45.0	16.4		10		38.3	38.8		9.8		19.2	4.9		9.1		34.0	4.0		7.7		18.8	46.4	K
7.8		49.9	56.4	K	9.6	29	10.3	1.3		9.1		31.5	15.0		9.7		59.4	31.4		9.5		19.1	35.4	
8.8		53.3	30.2		9.0		15.9	26.1	K	9.5		35.4	26.6		9.5	55	5.7	50.8		9.1		20.4	19.4	
9.0	13	28.1	48.4		9.0		35.7	57.9	M	7.3		47.1	33.6	L	9.8		31.6	37.5		9.5		22.2	34.0	
9.8		21.7	29.0		9.1	30	10.4	58.2		9.4		56.0	13.0		9.8		34.4	21.1		8.9		24.6	8.8	
9.4		35.6	44.5		9.4		24.0	40.0		9.5	42	7.5	45.0		9.0		34.7	45.5	M	8.7		37.1	32.6	Sj
9.7		45.4	1.3		8.9		25.1	16.6	K	7.8		17.1	6.6	K	9.8	56	12.0	4.3		8.9		39.2	18.9	
9.7		58.0	20.0		9.5		43.2	33.3		9.0		21.4	53.2	K	9.4		28.2	53.3		9.1		45.0	46.5	K
9.5	14	10.5	56.3		9.0		45.9	58.5		9.6		54.4	19.0		8.8		57.3	24.9	M	10		46.0	15.4	
8.2		35.5	35.8	K	9.7		51.5	33.4		10		57.6	39.7		9.2	57	11.1	34.6		7.3		48.1	55.2	K
8.9		42.4	15.1		9.5		52.3	7.7		8.8	43	16.0	22.7		9.5		31.4	13.9		10		50.0	19.3	
9.1		57.7	21.4		9.6	31	8.2	15.7		9.5		18.7	12.4		8.3		58.8	21.8	K	10		50.9	4.6	
9.4	15	14.0	2.4		9.5		25.1	10.9		9.2		31.4	26.6		9.4	58	1.5	35.5		10		51.0	22.0	
9.8		21.1	45.5		9.2		25.6	41.2	M	10	44	8.6	55.8		8.3		5.1	38.3	K	9.5		53.5	17.2	
9.8		32.4	37.1		9.1		41.0	39.5		9.3		10.7	33.2		8.7		14.2	50.0	L	9.4		55.5	17.5	
9.3		53.2	37.1		9.5		57.0	47.2		8.8		14.6	15.5		9.7		36.4	26.1		7.3		58.2	17.2	L
9.5	16	27.0	12.1		9.5	32	0.3	0.5		8.9		22.1	5.3		9.6		38.5	9.1		9.6		58.2	17.0	
9.8		52.1	5.7		9.3		18.9	30.2		7.8		50.7	21.6	K	9.6		41.5	30.9		9.0	10	1.8	13.9	
9.5	17	9.5	52.9		9.0		28.4	52.5		9.1	45	27.9	29.5		10		48.9	18.1		9.7		12.8	55.2	
9.1		13.5	27.2		9.0		40.6	30.7		9.4		48.0	32.1		10		54.3	15.2		9.2		12.8	1.1	
9.0		25.8	13.2		8.4		43.4	50.0	K	9.1	46	1.6	58.0		9.9	59	4.5	51.3		9.8		13.5	14.4	
9.3		46.0	10.1		9.5		50.0	22.9		9.8		16.7	59.8		9.1		5.2	56.4		9.3		22.9	0.5	
9.5		49.0	11.2		9.5	33	4.6	28.6		9.4		25.7	30.1		9.8		8.2	19.2		9.4		27.6	56.6	
9.4	18	13.0	27.6		4.5		15.5	47.6	K	9.1		30.6	56.0		9.5		50.4	28.6		8.5		33.5	9.3	K
9.9		46.5	52.2		9.0		30.6	16.6		9.6	47	0.6	54.9		8.5	0	7.5	42.6	K	9.8		38.9	3.5	
9.3		54.4	22.5	L	9.8	34	13.6	16.4		8.5		4.1	2.4	K	9.4		32.6	37.7		9.4		41.3	16.0	
10		58.7	30.8		10		24.5	21.3		9.4		18.3	4.2		9.3		55.7	4.1		8.0		42.1	30.0	K
9.3	19	2.7	34.5		9.8		52.4	52.7		9.4		40.2	56.9		9.1	1	3.3	57.2		9.5		44.7	39.8	
9.2		2.8	47.8		9.8	35	2.5	49.2		9.3		44.1	50.5		9.6		22.7	27.2		9.5		54.7	49.9	
8.6		3.2	1.2	K	9.5		16.1	20.4		9.2	48	29.1	22.9		9.1		25.6	43.9	M	9.3		55.5	9.5	K
9.2		11.4	16.5		9.5		27.7	53.0		9.5		54.2	17.6		9.1		25.7	3.0		9.5		58.2	12.4	
9.0		20.6	37.7		9.5		30.4	45.8		8.9		59.6	50.2		9.4		34.2	23.3		9.5	11	3.7	43.0	
7.8		41.3	3.7	K	9.4		30.9	29.3		9.9	49	19.1	15.2		9.5		50.8	13.7		9.4		18.0	16.4	
9.5	20	22.3	7.6		9.6		55.6	38.0		9.7		57.4	31.7		9.1	2	38.8	12.1		9.7		22.2	44.3	
8.5		35.2	11.5	M	9.7	36	3.6	14.7		9.8	50	6.2	42.8		8.7		40.8	57.8	M	9.2		25.6	21.4	
9.5	21	20.8	11.7		10		4.0	26.9		10		10.3	55.2		9.5	3	6.6	20.0		9.4		27.2	40.8	

5001—5060

m	18h m	s	—12° ′	
8.6	11	34.7	34.4	Sj
9.1		41.3	33.9	K
10		43.4	31.9	
9.8		43.9	35.5	
9.8		45.0	28.3	
10		45.4	21.9	
9.1		56.7	46.8	
9.3	12	1.0	42.0	
9.1		10.1	13.9	
9.8		25.4	20.0	
9.1		26.2	54.4	
9.6		27.2	10.0	
9.5		34.7	26.0	
8.9		45.2	47.7	
9.3		59.2	32.8	
9.1	13	17.1	32.5	
9.5		27.2	31.9	
9.3		32.4	28.5	
9.5	14	1.7	41.5	
9.4		5.9	25.0	
9.1		29.0	6.7	
10		38.7	57.1	
9.3	15	2.7	42.8	
5.5		5.5	4.7	K
9.3		10.4	7.4	
7.3		11.6	21.4	Sj
9.8		26.7	55.6	
9.4		27.4	43.4	M
9.8		43.5	12.3	
9.6		43.5	9.6	
8.0		50.6	39.1	L
9.5		52.2	28.3	
8.7	16	2.4	18.1	K
8.8		4.1	16.5	K
9.5		28.4	14.8	
8.7		31.2	44.8	M
9.8		31.9	39.3	
8.6		33.2	33.1	L
9.8		39.4	8.8	
9.8		42.5	14.3	
9.7		57.2	27.3	
9.8		57.4	44.3	
9.3	17	16.1	37.2	
9.5		18.5	15.7	
8.5		22.7	46.3	
9.6		35.2	59.7	
9.5	18	19.6	12.4	
9.0		31.7	21.6	K
9.3		40.3	45.0	
9.5		51.2	55.3	
9.8		53.3	10.7	
9.7	19	5.7	35.2	
9.1		15.2	37.5	
9.3		19.7	49.1	
9.0		28.2	33.2	M
9.8		29.5	17.8	
9.3		50.6	16.1	
9.0	20	20.2	53.3	
8.9		26.3	44.9	
9.2		41.7	33.2	

5061—5120

m	18h m	s	—12° ′	
9.8	20	50.2	16.9	
9.7		51.5	6.0	
9.4		52.2	51.8	
9.5		56.1	32.6	
9.7	21	7.7	37.3	
9.3		11.0	37.9	
9.1		24.2	42.2	
9.4		24.2	20.2	
9.5		38.7	25.6	
8.8		43.0	5.4	
9.2		46.3	20.7	K
8.7		46.9	29.2	K
9.7		49.8	51.5	
9.5		55.9	56.2	
9.5	22	1.7	47.0	
9.5		5.7	17.0	
8.4		10.2	41.2	Sj
9.8		18.6	19.3	
9.5		23.5	15.9	
9.3		37.7	44.1	
9.4		50.0	7.7	
9.5	23	5.5	10.2	
8.7		15.2	26.2	
8.3		18.9	41.4	Sj
7.0		19.2	6.8	K
9.5		19.8	48.0	
9.6		33.1	57.8	
9.8		35.2	44.4	
9.5		53.5	9.5	
9.0	24	1.2	41.2	
9.3		6.3	5.4	
9.8		18.8	39.2	
9.6		20.6	51.1	
9.7		33.9	56.0	
9.4		33.9	54.0	
9.4		52.1	15.5	
9.8	25	3.6	30.9	
9.6		4.0	54.4	
9.1		8.7	21.1	
9.5		24.3	1.1	
9.5		24.3	4.9	
7.7		24.4	48.7	Sj
9.1		44.6	14.0	
8.9		45.9	21.8	
9.8		46.5	44.6	
9.1	26	3.7	51.6	
9.6		27.4	10.0	
10		31.5	22.0	
9.5		31.7	19.8	
9.7		34.1	7.8	
9.5	27	5.2	42.9	
7.8		13.6	17.3	K
9.1		45.7	56.8	
10		48.2	31.5	
8.2	28	24.1	5.6	Sj
9.7		50.9	57.6	
9.7		54.1	47.1	
9.6	29	17.0	0.7	
8.7		22.4	48.0	K
6.4		25.7	27.9	K

5121—5180

m	18h m	s	—12° ′	
9.1	29	34.3	6.4	
9.3		50.2	25.2	
9.9		56.9	29.2	
9.3	30	11.9	17.1	
9.8		20.4	40.4	
9.0		33.3	44.5	WC
7.9		39.8	10.5	K
9.9		56.3	5.3	
7.5	31	18.8	22.3	K
9.0		24.8	57.5	K
9.1		27.9	38.0	
8.5		34.7	0.2	M
9.5		53.9	32.6	
9.5		56.4	17.1	
9.4	32	1.7	51.3	
9.8		6.4	55.4	
9.0		27.3	49.9	Sj
9.4		37.6	36.0	
9.2		47.6	33.3	
9.9	33	21.4	48.7	
9.2		21.4	51.3	
9.0		35.1	14.6	
9.5		36.0	46.4	
9.9		37.9	34.2	
9.7		40.0	58.5	
9.5		44.0	58.3	
9.2		57.4	51.2	
9.8	34	1.8	54.4	
9.4		15.5	34.8	
8.7		28.6	2.0	K
9.0	35	26.5	51.1	
9.6		34.0	29.3	
9.3		54.2	30.5	
9.5	36	2.8	46.1	
9.0		20.7	8.3	
8.3		57.0	56.2	K
9.9	37	8.1	33.2	
7.8		10.8	43.7	L
6.7		25.8	44.0	L
8.3		46.7	14.1	K
9.1	38	5.2	13.6	
8.8		28.8	47.9	K
8.6		47.2	25.9	K
8.8		52.5	32.0	K
9.4		53.8	50.6	
8.9		59.7	17.2	
9.5	39	34.2	14.4	
7.1		37.2	28.8	K
9.3		37.3	32.5	
9.6		39.0	58.1	
9.5	40	2.5	35.3	
9.4		16.8	44.1	
9.2		32.2	28.0	
8.5		42.3	42.8	M
9.5		43.4	34.3	
9.2		48.1	42.9	
8.8	41	3.8	45.2	M
9.1		5.2	55.5	
9.4		10.3	54.9	
9.6		11.9	35.4	

5181—5240

m	18h m	s	—12° ′	
9.5	41	15.5	33.6	
8.7		19.6	58.6	
9.1		28.2	31.3	
9.6		38.8	43.8	
9.8		47.4	51.9	
9.5	42	27.6	39.0	
9.8		45.9	56.6	
9.2		52.4	42.0	
9.4	43	2.3	23.2	
9.5		11.1	26.5	
9.1	44	18.1	25.7	
9.8		21.8	54.3	
9.2		24.3	3.3	
8.8		29.4	31.8	M
9.0		35.2	4.0	
9.5		48.9	32.3	
9.5	45	7.1	19.8	
8.9		12.9	45.0	M
9.4		26.1	40.0	
9.8		32.3	59.5	
9.4		39.3	9.3	
9.3	46	19.7	46.9	
9.6		21.8	32.8	
9.2	47	4.2	54.8	
9.6		18.3	17.1	
9.7		21.7	9.6	
9.6		26.3	10.0	
9.3		26.3	59.1	
9.3		31.9	31.3	
9.9	48	18.2	7.6	
9.5		27.3	8.6	
9.0		42.3	19.8	
9.5		45.2	8.9	
8.8		57.7	4.6	K
9.1	49	7.2	3.7	
9.5		9.3	18.8	
9.5		11.4	48.5	
8.3		37.4	59.0	K
9.8		51.4	48.3	
9.8		55.5	14.6	
9.5		57.3	18.1	
9.5	50	2.4	56.8	
9.5		5.9	30.2	
9.4		15.0	33.9	
9.5		19.4	39.7	
8.8		22.4	33.4	M
10		52.3	25.3	
6.9		53.4	46.4	Sj
9.8	51	14.6	14.5	
9.6		15.3	18.1	
9.1		23.4	43.8	
9.7		26.5	11.8	
9.5		29.7	31.3	
9.2		40.6	38.6	
9.0	52	1.8	7.9	
8.7		2.1	48.1	K
8.3		4.3	27.9	M
9.8		10.8	28.6	
9.5		20.4	17.9	
9.5		26.4	50.1	

5241—5300

m	18h—19h m	s	—12° ′	
9.5	52	39.6	30.9	
9.3		50.4	47.5	
9.3	53	4.0	30.7	
9.2		6.8	10.1	
9.5		42.3	34.4	
9.4		46.2	5.7	
9.0	54	1.9	58.6	Sj
9.0		5.3	34.4	K
9.5		5.8	8.2	
9.0		7.6	30.6	K
9.0		9.4	51.5	
9.1		30.3	23.3	
9.8		40.5	2.8	
9.4		41.5	35.5	
9.5		42.8	26.0	
9.2	55	2.3	13.0	
9.3		8.9	9.3	
9.5		9.2	0.1	
7.5		12.8	54.8	K
9.6		22.4	47.6	
9.5		33.3	23.7	
9.4		39.2	3.8	
9.0		47.0	0.6	K
9.7	56	8.0	25.4	
8.9		11.9	46.3	K
9.3		18.0	6.8	
9.5		19.3	8.3	
9.3		29.9	31.5	
9.4		57.9	57.6	
9.5	57	2.8	7.1	
9.2		5.8	11.8	K
8.8		11.9	38.0	M
9.3		19.2	33.4	
7.5		33.3	13.4	Sj
9.5		36.5	47.6	
9.4	58	1.8	16.1	
9.4		14.3	15.7	
7.0		22.2	5.9	K
8.0		37.0	37.2	
9.2		40.3	16.7	
8.3		55.7	3.0	K
9.0	59	8.0	34.2	M
9.5		8.9	53.5	
9.8		24.0	46.8	
9.0		25.6	22.9	M
9.5		40.8	21.5	
9.7		41.9	33.8	
9.4		47.1	58.3	
9.6		48.4	59.1	
9.4	0	14.8	8.6	
9.8		44.1	12.3	
9.1	1	12.8	7.3	
9.5		14.3	3.9	
8.8		16.4	18.9	K
8.8		34.6	0.9	K
9.3		37.5	29.2	
9.7		38.5	28.5	
8.2	2	35.0	42.5	K
7.5		44.9	22.4	K
9.1		56.9	17.7	K

5278: 21:61 5′59:7 B_4, Ep. 1873.54

5301—5360				5361—5420				5421—5480				5481—5540				5541—5600			
	19h		−12°		19h		−12°		19h		−12°		19h		−12°		19h		−12°	
m	m	s	′	m	m	s	′	m	m	s	′		m	s	′		m	s	′	
9.3	3	10.4	16.4	8.9	13	13.3	31.5	9.0	21	58.1	46.0	K	9.1	30	47.3	52.8	Sj	6.5	40	46.2	40.2	Sj
9.7		24.9	2.5	9.8		36.3	14.3	9.5	22	12.3	33.7		9.5		51.0	5.3		9.1		56.6	15.9	
8.7		39.5	54.8	Sj 9.7		49.6	38.0	9.5		16.0	19.2		9.6		53.1	12.4		9.5	41	37.4	45.2	
9.8		42.2	16.6	9.8	14	16.8	58.0	9.5		41.4	18.0		9.3		57.3	56.9	M	9.8		42.5	32.7	
9.8	4	27.7	40.5	9.7		22.8	27.3	8.0		41.4	9.0	M	9.5	31	8.8	49.3		9.5		58.0	31.3	
9.4		28.0	58.6	10		22.9	57.5	9.4		50.5	22.4		10		9.7	8.6		9.3	42	6.9	56.7	
9.6		40.8	13.9	10		26.1	2.5	8.3	23	5.5	46.1	L	9.3		34.1	39.2		9.4		10.0	36.9	
9.0		46.0	49.4 M	9.0		26.3	7.8 M	9.5		8.3	40.5		9.0		48.3	16.3	K	9.8		21.4	42.3	
9.0	5	0.4	17.1	9.5		37.2	0.0	10		19.9	17.8		9.3		59.3	51.5		10		21.6	13.5	
9.1		5.4	20.2	9.8		39.8	6.5	9.0		20.2	45.3	M	9.8		59.3	59.4		9.5		41.1	15.7	
5.9		9.4	31.5 B	9.1		40.3	11.6	9.4		33.2	52.9		8.8	32	2.0	12.0	K	9.8		57.4	46.4	
10		10.3	45.2	8.7		41.6	12.5 M	9.2		39.7	42.6	M	8.8		17.3	56.7	M	9.5	43	0.4	32.5	
9.7		10.5	47.8	9.5		47.4	9.6	9.5		42.4	21.8		9.5		23.4	5.8		9.2		2.2	7.3	
9.7		27.2	51.5	9.2		48.6	44.0	9.4		44.5	28.0		9.2		37.7	31.5		8.9		3.6	1.7	M
9.0		50.0	59.3	9.4		50.0	29.7	9.5		59.9	9.7		9.0		47.5	19.8	K	9.5		8.9	23.0	
8.2	6	2.9	19.7 K	9.5		52.4	16.0	9.5	24	0.7	48.0		10		52.3	43.1		9.6		15.9	23.8	
8.7		17.0	49.7 Sj	9.3	15	15.5	19.7	9.1		1.5	30.7		8.3	33	22.6	15.6	Sj	9.4		20.1	20.5	
9.2		19.3	12.1	9.5		17.6	28.8	9.0		3.4	19.3		8.9		31.0	4.0		7.0		29.4	59.1	M
9.4		38.4	11.5	9.4		40.1	44.0	9.0		6.7	41.5	M	9.8		43.4	39.5		8.2		30.6	11.0	M
9.8		41.9	13.7	9.8		56.4	5.9	9.8		19.2	59.7		9.5	34	9.2	19.9		10		38.0	40.3	
9.2		49.4	34.9	9.5		57.0	30.4	9.5		32.7	52.5		9.2		35.8	48.5		8.7		38.6	23.6	
9.5		52.0	52.4	9.1	16	1.1	11.1	9.3		45.8	36.5		9.6		43.6	26.0		9.3		42.4	48.3	
9.5	7	0.6	58.0	9.2		2.8	13.4	8.0		54.2	6.5	Sj	9.5	35	13.4	25.5		8.5	44	1.9	56.8	Sj
9.3		1.5	53.0	9.5		5.9	30.3	9.3	25	4.2	55.3		9.5		17.5	42.5		8.5		3.2	14.5	M
9.0		7.3	6.4 M	9.8		22.2	56.7	9.7		11.7	9.3		9.5		23.6	20.4		9.4		23.1	8.8	
9.2		25.4	1.2	9.4		25.0	12.0	9.9		12.8	10.7		9.4		29.6	28.1	M	9.5		30.7	19.5	
9.4		29.5	48.0	9.0		33.6	57.5	9.8		17.2	33.4		9.5		32.0	11.9		9.0		56.6	2.1	M
8.5	8	9.7	3.5 K	7.3		34.3	53.7 L	9.6		18.3	34.3		9.5		45.1	22.9		9.4	45	3.1	33.7	
9.6		10.6	32.6	9.5		41.9	24.0	9.1		40.0	19.4	M	9.8		59.1	18.6		8.8		19.7	9.5	
9.8		18.4	8.7	8.0		47.8	7.2 Sj	10		48.7	32.4		7.8	36	4.0	0.7	M	10		28.0	58.4	
9.4		51.8	2.7	9.7	17	12.4	28.9	9.5		49.8	37.3		9.0		7.3	47.9		9.6		29.6	53.1	
9.4		55.0	29.0	10		14.8	58.3	9.0		55.2	6.4	M	9.5		19.6	15.2		9.1		37.1	49.3	
9.1	9	2.0	52.8	9.0		32.6	56.2 K	9.6		59.7	32.2		9.3		25.4	39.6		9.8	46	9.5	15.5	
9.5		19.5	47.2	9.6		42.1	32.0	9.5	26	19.0	16.5		9.6		25.6	15.7		7.8		23.6	44.3	K
8.8		28.3	25.7	9.4		55.3	12.0 M	9.3		24.1	35.8		9.5		26.1	55.2		9.5		25.2	0.5	
9.3		42.4	9.6	9.3	18	4.6	52.5	8.2		27.8	26.6	L	9.5	37	6.5	3.4		9.3		36.1	51.1	
9.0	10	1.8	2.9	9.5		6.7	20.5	9.5		44.1	39.8		9.3		29.6	2.5	M	9.0		42.1	45.8	K
9.5		15.4	19.0	8.9		12.3	34.4 M	9.5		49.3	53.2		9.1		39.4	42.6		9.8		54.9	16.5	
9.2		21.8	7.6	9.0		13.8	51.8 Sj	9.8	27	10.2	53.2		9.3		54.0	35.1		9.4	47	7.5	42.5	
9.3		30.8	44.0	9.3		25.2	47.0 K	9.9		26.5	17.6		10		56.2	11.2		9.1		35.5	49.1	
9.3		36.0	55.1	9.6		33.0	10.4	6.3		28.2	33.9	Sj	9.8	38	7.9	50.1		9.1		49.0	50.2	M
9.3		45.3	44.2	9.7		43.1	29.8	9.4		36.0	22.7		10		18.4	16.3		10		58.7	3.5	
9.5		48.5	27.0	9.5		47.2	34.0	9.0		37.4	0.7		8.0		24.1	13.7	Sj	9.8	48	4.5	40.0	
9.0		49.9	20.6	9.5		59.9	19.7	9.5		49.7	33.0		9.8		26.0	39.0		9.8		32.2	10.5	
9.3		56.2	59.7	9.6	19	21.3	26.8	9.7		51.4	16.3		9.1		28.4	56.6		9.2		38.5	49.8	M
9.4	11	11.4	10.1	9.4		38.7	42.8 M	9.5		55.9	34.5		8.2		50.0	29.6	K	9.5		49.3	21.0	
9.4		16.8	9.9	9.5		47.1	34.0	9.5		58.2	30.6		9.8		50.9	43.5		9.8		51.7	4.7	
10		26.1	57.6	9.1		59.6	43.1 M	9.4	28	21.0	11.7		9.2		51.5	31.9		9.5		52.5	56.5	
9.8		33.4	12.4	7.3	20	7.1	26.0 Sj	9.8		34.7	56.0		9.6		57.3	13.8		9.5		59.8	18.7	
9.5	12	15.8	51.7	9.5		9.3	10.0	9.1		37.3	39.7		9.0		58.5	36.1	K	8.5	49	2.2	56.8	K
9.4		26.0	20.9	9.3		32.6	27.5 M	9.8		43.3	55.3		9.8	39	49.8	48.0		9.1		5.7	7.1	K
9.8		37.1	35.7	9.2	21	5.1	26.1 M	9.3		57.3	27.7		9.8		50.6	18.8		9.2		6.7	26.5	
8.9		41.6	42.1	9.5		6.7	22.5	9.0		57.7	2.8	M	9.3		56.9	54.2		9.2		12.1	36.2	
8.6		57.2	32.1 L	9.3		12.2	54.5 K	9.5	29	36.5	35.0		9.4		57.1	18.4		8.8		15.5	56.1	K
8.4		57.7	14.9 K	9.0		19.7	49.1 K	9.3		53.3	56.7		8.7		58.7	50.0	K	10		29.6	16.8	
9.5	13	5.2	36.1	9.1		30.0	29.2	9.6		56.0	16.8		9.0	40	7.2	20.0		9.7		31.1	17.6	
9.0		5.5	1.7	7.3		31.0	56.6 Sj	9.5	30	3.6	36.8		9.8		29.1	45.1		9.0		33.9	25.0	
9.0		5.5	23.4	9.1		37.9	18.4 M	9.1		23.6	29.5		9.9		31.0	27.1		9.4		48.8	53.8	
9.1		8.1	13.7	9.4		55.9	9.1	9.5		34.4	34.8		9.4		34.4	47.4		9.4	50	14.3	23.7	
9.2		8.4	31.0	8.3		56.2	52.5 Sj	9.3		39.7	20.1		7.8		35.7	28.5	K	9.8		15.6	34.4	

5558: 30:05 59′14.″1 B_1, Ep. 1883.64

5601—5660

m	19h—20h m s	—12° ′	
9.8	50 32.2	26.5	
8.8	51 0.1	35.3	
8.9	1.0	21.1	
9.4	1.5	51.7	
9.3	2.7	5.0	
9.0	7.3	7.0	K
7.5	33.2	6.3	Sj
8.7	36.1	25.5	
9.8	54.9	56.2	
9.4	52 16.1	39.2	
9.5	21.3	21.3	
9.5	58.1	59.4	
7.3	53 0.7	38.0	Sj
9.4	2.8	9.8	
9.5	7.6	27.7	
9.4	8.9	33.7	
8.7	10.4	14.4	K
9.0	22.2	29.5	K
9.0	56.9	56.5	
9.6	54 7.2	31.8	
8.8	15.8	21.4	Sj
9.4	21.2	31.2	
7.8	25.9	13.9	K
9.1	29.8	44.6	
9.4	51.7	20.8	
9.9	53.3	11.0	
9.4	55 8.3	6.0	
8.0	12.9	49.3	Sj
9.3	20.0	37.6	
9.8	21.0	54.8	
9.8	37.9	43.6	
9.1	41.8	17.6	
9.7	58.9	59.2	
9.0	56 6.4	12.7	
8.8	19.3	36.7	M
8.5	22.6	14.8	Sj
9.5	22.8	5.1	
9.5	36.3	2.5	
8.2	57 1.4	21.9	Sj
10	3.3	59.8	
6.2	4.9	0.0	Sj
9.5	58 12.8	42.7	
9.5	19.5	30.1	
9.0	20.8	42.1	Sj
7.3	47.2	51.2	Sj
9.8	50.3	58.7	
9.5	51.8	41.3	
9.8	59 10.2	20.3	
9.9	31.1	7.5	
9.6	40.2	9.0	
9.2	0 10.4	32.0	
9.8	18.2	26.4	
8.5	52.2	5.1	M
9.5	55.8	55.9	
9.0	1 13.7	34.5	M
9.0	59.7	25.7	
9.1	2 20.2	11.0	K
9.3	22.7	31.1	
9.5	25.9	44.2	M
9.1	43.8	17.0	K

5661—5720

m	20h m s	—12° ′	
9.7	2 52.8	24.5	
9.4	3 39.4	30.1	
8.5	46.1	30.2	Sj
6.5	55.9	49.1	K
9.5	58.9	44.9	
9.2	4 0.3	15.9	
9.5	18.0	8.6	
9.7	47.8	5.3	
9.5	55.3	5.6	
9.5	5 21.6	44.0	
9.2	47.2	31.1	M
9.9	6 8.0	52.0	
9.5	8.5	45.5	
9.1	9.6	39.5	M
7.8	50.8	4.2	Sj
9.7	7 22.0	43.1	
9.6	46.0	59.5	
9.2	50.4	10.2	
9.0	55.4	8.1	K
6.8	8 21.0	46.5	Sj
9.5	9 5.5	54.1	
9.1	35.6	57.7	K
4.5	36.5	57.2	K
9.5	51.5	43.7	
3.8	10 0.5	59.1	K
9.1	54.1	28.2	K
9.2	54.3	53.3	K
9.9	11 31.9	28.4	
9.5	47.5	58.0	
9.6	47.7	37.8	
9.6	49.8	42.4	
9.5	59.9	23.8	
9.1	12 3.4	1.0	K
9.2	24.9	0.9	K
9.4	31.7	58.0	
9.2	31.9	4.9	K
9.8	40.6	43.8	
9.8	55.5	17.0	
10	13 8.6	58.7	
9.6	10 5	36.6	
9.0	12.2	12.7	K
9.1	34.0	20.5	K
9.3	14 3.5	55.4	
8.5	34.7	50.5	Sj
10	43.6	57.1	
9.3	50.4	10.7	
9.3	15 9.1	42.8	
9.5	9.3	33.8	
9.5	22.0	15.3	
9.5	36.9	11.2	
9.5	41.2	50.1	
9.0	52.6	19.8	M
10	58.0	17.4	
8.5	16 18.7	4.3	K
9.8	26.3	35.7	
9.5	29.1	55.0	
9.4	53.4	35.3	
9.6	53.6	0.5	
8.8	57.5	2.0	
9.4	58.9	41.4	

5721—5780

m	20h m s	—12° ′	
7.7	17 8.5	10.2	K
9.4	14.9	47.2	
10	23.2	21.9	
9.1	31.0	31.4	
9.5	18 0.3	26.6	
9.3	13.4	27.6	
8.2	17.2	41.2	K
9.5	28.5	35.0	
10	52.4	34.1	
9.8	19 6.6	20.5	
7.8	10.8	0.6	Sj
9.1	11.1	17.9	K
9.2	17.5	6.2	K
9.1	35.8	33.0	
9.8	36.5	5.5	
9.5	48.6	3.8	
10	20 12.1	31.9	
7.4	33.6	16.5	K
7.5	49.5	12.0	Sj
9.7	52.1	11.8	
9.8	21 4.3	47.7	
9.1	34.6	14.2	
9.3	43.6	44.5	
9.8	54.3	40.5	
9.3	22 8.8	35.6	Sj
9.7	13.9	34.7	
8.2	22.6	16.5	Sj
8.5	27.3	42.9	M
9.1	29.9	34.6	
9.6	32.3	25.2	
9.5	23 6.8	58.0	
8.6	18.6	7.6	K
9.2	29.1	7.6	Sj
9.9	30.8	43.2	
9.2	43.1	22.1	
9.7	56.6	22.1	
10	24 7.4	27.9	
9.2	8.2	36.6	
8.5	10.1	3.7	Sj
9.8	50.6	3.5	
9.8	54.2	22.3	
9.5	57.9	39.4	
9.9	25 30.7	16.8	
8.5	50.7	12.6	Sj
9.5	54.9	34.6	
7.0	26 0.8	49.7	B
9.8	26.8	54.4	
8.7	40.8	56.4	K
9.6	43.4	41.5	
9.4	44.2	21.9	
9.5	27 19.4	11.7	
9.5	22.1	11.1	
9.8	34.2	18.4	
9.5	38.2	3.9	
9.5	44.7	22.6	
10	47.8	16.8	
9.4	51.7	19.0	
6.8	28 15.9	52.4	Sj
9.2	26.0	4.7	
9.5	38.7	1.9	

5781—5840

m	20h m s	—12° ′	
9.6	28 49.9	35.2	
9.8	56.2	22.8	
9.6	29 1.3	16.0	
8.9	4.2	0.4	Sj
8.9	6.2	24.3	K
9.5	21.2	6.9	
8.6	27.2	21.6	K
9.3	53.6	35.7	
8.5	53.9	31.2	K
9.0	54.7	48.5	K
9.8	56.7	12.4	
8.4	30 34.3	27.5	K
9.8	34.4	35.1	
8.3	59.3	35.1	K
7.8	31 25.6	16.1	K
8.8	31.2	23.9	Sj
9.9	31.9	52.2	
9.4	36.1	33.7	
10	37.5	45.7	
9.3	32 9.6	36.8	
9.5	18.0	44.9	
9.5	44.3	4.5	
8.5	55.5	42.8	Sj
9.5	33 13.0	42.4	
10	20.8	24.6	
9.9	25.0	10.1	
9.5	34.0	26.9	
8.2	43.5	50.8	K
9.9	34 20.0	42.3	
9.8	21.8	18.3	
9.3	53.7	29.4	M
8.7	55.0	31.0	K
9.8	35 20.1	48.8	
8.5	20.3	13.7	K
9.0	24.4	17.1	K
9.4	28.3	25.0	
8.5	33.5	55.5	K
6.7	37.4	9.5	Sj
9.7	47.4	30.9	
9.7	36 11.6	40.6	
8.3	12.0	7.3	K
9.0	13.1	48.6	K
9.8	14.5	20.7	
9.1	36.9	6.1	K
9.6	56.2	38.2	
9.5	37 0.6	42.1	
9.5	55.2	29.1	
9.5	38 6.9	30.4	
9.0	12.5	58.6	M
9.0	13.1	7.6	Sj
9.4	14.0	25.5	
9.3	36.7	36.0	
9.1	37.1	49.2	K
9.5	39 10.6	17.1	
9.5	11.0	54.6	
9.6	40.4	28.7	
9.3	42.2	40.4	
9.8	43.6	55.1	
8.0	40 16.6	59.1	Sj
8.9	26.0	5.1	K

5841—5900

m	20h m s	—12° ′	
10	41 22.7	48.0	
10	35.2	45.0	
9.3	36.1	11.0	
9.4	39.3	0.6	M
9.4	42 8.6	4.3	
9.3	25.7	17.5	
9.5	31.1	0.7	
9.1	42.0	26.4	
9.3	46.9	6.8	
9.2	47.2	47.5	
9.9	43 7.7	25.3	
9.4	21.1	7.2	
9.6	44 8.5	18.4	
6.5	45 9.1	7.0	Sj
9.0	32.9	38.2	M
9.9	42.2	22.9	
8.4	44.1	12.0	K
8.3	46 0.3	50.3	Sj
9.5	12.7	23.7	
9.9	18.2	13.6	
9.5	24.1	8.2	
10	47 3.3	27.5	
9.7	6.5	32.2	
9.2	32.8	37.6	
8.6	35.1	20.4	
9.5	48 1.0	16.5	
9.8	2.8	54.5	
9.7	4.0	57.9	
8.8	5.7	8.9	Sj
9.7	13.0	43.6	
9.5	49 3.0	38.3	
9.4	8.0	1.4	K
10	37.1	5.2	
9.8	47.9	25.5	
9.8	50 0.0	19.1	
7.1	5.9	30.8	Sj
8.8	9.1	56.4	M
9.1	11.6	58.9	
9.5	27.9	15.1	
10	44.9	47.2	
9.8	56.1	31.7	
9.2	51 6.3	3.2	K
9.9	29.1	26.2	
9.7	49.2	30.8	
9.6	52 59.2	7.5	
8.5	53 6.9	2.0	Sj
9.4	43.3	53.6	
9.8	48.1	51.1	
10	54 3.6	46.8	
7.0	5.3	15.8	K
9.5	15.6	58.7	
9.6	20.6	44.3	
9.5	24.6	20.1	
9.4	55 0.4	29.3	K
9.5	22.9	47.7	
9.1	32.9	26.7	M
9.1	49.6	32.6	
9.2	56 17.3	32.0	
9.4	30.3	14.5	
9.8	42.2	41.0	

5613: 0ʰ06 38′14″.7 B_4, Ep. 1873.74 5641: 4ʰ.76 0′21″.7 B_3, Ep. 1884.31 5748: UA var $6^3/_4$—$8^1/_2$

5901—5960					5961—6020					6021—6080					6081—6140					6141—6200				
	20h—21h		−12°			21h		−12°			21h		−12°			21h		−12°			21h—22h		−12°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.7	57	1.2	58.6		9.4	11	20.1	31.2		9.5	24	4.6	23.2		9.5	36	48.3	38.1		9.8	51	31.3	21.1	
9.8		3.7	5.8		8.8		36.8	56.9	K	9.6		8.8	8.9		9.5	37	8.1	4.4		10		49.3	27.2	
9.9		12.2	29.0		9.2	12	1.7	40.0		9.9		12.1	0.1		9.6		22.4	47.5		8.9	52	23.9	54.8	M
9.6		28.6	50.2		10		7.2	53.3		9.7		26.6	12.3		9.8		38.8	19.1		9.3		28.8	16.1	
9.9		52.8	30.0		8.2		8.7	25.5	K	9.8		26.6	42.5		9.6	38	1.4	55.8		9.5		33.7	41.1	WC
9.8	58	20.8	34.6		9.0	13	0.8	17.0		7.0		29.5	53.9	B	9.4		24.3	39.4		9.2		39.3	6.2	
8.3		35.5	32.0	L	9.3		13.8	18.0		9.2		35.0	22.7		5.5		43.6	1.8	K	8.8		57.6	7.1	K
9.5		36.7	45.4		9.5		14.1	7.5		9.4	25	42.1	19.5		7.3		52.4	21.7	K	10	53	4.9	46.4	
10	59	25.2	45.4		9.8		21.8	20.7		8.7	26	3.3	46.4	B	8.9		58.7	36.0		9.7		19.8	25.6	
9.9		45.4	6.8		9.0		30.0	55.2	Sj	8.9		8.7	25.0	Sj	10	39	1.3	27.4		8.6		26.0	2.2	K
9.0		56.8	46.2	M	9.0		30.4	56.2	K	9.5		26.4	52.0		9.2		31.6	38.7		9.8		30.8	8.7	
9.5	0	0.8	5.5		7.9		37.6	4.2	K	9.1		31.1	58.0	B	9.8		49.5	57.9		9.0		52.2	40.7	K
9.0		3.0	16.5	K	9.8		43.7	47.1		9.5	27	25.9	2.6		10	40	1.6	19.9		9.1		53.3	41.1	K
9.3		26.8	36.3	K	9.0		43.9	15.1	K	10		41.7	25.7		9.1		11.5	18 3	K	10	54	0.6	58.5	
9.2	1	8.4	54.0	M	9.9		51.7	10.8		8.4		43.3	25.9	K	8.7		14.9	48.9	K	9.8		13.8	7.5	
10		20.8	40.9		9.2		55.8	58.5	K	9.8	28	26.5	51.3		9.2		16.9	50.2	K	9.5		16.2	40.9	
10		37.7	55.3		9.7	14	3.8	17.7		9.8		35.2	12.5		9.8		19.0	34.4		9.5		54.7	11.2	
9.0		39.4	11.2		9.1	15	14.3	16.2		9.8		45.6	3.7		9.4		19.9	27.2		9.4		57.9	54.3	
9.2		51.4	31.7		9.8		20.8	47.1		9.1		58.5	30.0	Sj	9.8		39.4	17.5		9.2	55	10.3	15.9	
9.2	2	0.3	7.0	K	9.4		40.2	33.1		9.5	29	1.3	13.6		9.5	41	16.8	26.0		9.2		16.3	8.9	M
9.0		26.4	52.1	Sj	8.2		48.3	40.2	K	9.1		8.0	3.6	K	10		28.6	1.6		9.1		29.3	10.7	
10		27.8	37.0		9.8		55.7	8.2		9.7		22.1	24.1		10		50.5	20.4		10		35.5	38.8	
10		29.1	42.8		9.8	16	1.2	5.2		10		29.2	27.7		8.3	42	16.6	16.8	K	9.7		39.7	29.0	
9.8		38.5	35.3		9.8		44.1	0.3		7.7		30.1	0.3	K	8.2		24.0	0.7	K	9.4		50.2	46.3	
9.1		52.8	58.4		9.1		48.1	24.1	L	9.5		33.2	38.1		9.8		27.5	53.6		9.8	56	15.3	11.6	
8.2		54.6	19.0	K	9.8		54.4	55.8		9.3	30	17.1	49.4		9.7	43	1.3	1.4		9.8		15.4	6.0	
8.6	3	38.5	7.5	K	9.4		57.3	12.7		9.2		20.2	57.5		9.4		0.1	52.2		9.4		21.3	13.8	
8.9	4	4.4	6.1	K	10		58.7	1.6		8.3		25.7	41.3	K	10		17.0	59.1		10		33.5	56.6	
9.6		13.9	30.9		10	17	56.8	15.5		9.8		46.6	41.0		9.8		19.5	53.5		9.1		42.6	6.9	
9.6		20.3	27.4		9.6		57.9	16.8		10		48.3	53.1		10		32.7	32.4		9.4		59.4	9.6	
8.9		26.1	30.5	M	9.7	18	11.5	30.2		9.9		50.2	18.4		9.8		34.8	0.1		10	57	2.5	56.6	
9.0		32.2	24.4	WC	9.1		15.7	3.6		9.8		51.2	5.4		8.8		37.0	53.9	K	9.6		6.1	30.5	
9.0		32.6	20.7	L	9.4		31.6	16.5		10	31	2.8	56.7		9.1		41.4	19.6		9.4		22.9	50.6	
9.0		30.4	6.4		7.5		32.4	42.1	K	9.3		23.7	53.9	K	9.5		42.0	48.9		9.5	58	6.8	36.5	
9.0	5	8.5	8.0	L	9.3		37.4	38.0	B	10		39.6	12.8		9.2	44	20.1	35.7		9.6		7.6	39.2	
9.5		48.9	44.5		9.7	19	8.4	20.1		9.8		50.7	11.9		9.6		30.5	57.0		9.4		10.4	21.0	
9.8		50.4	3.1		8.8		31.4	52.6		9.3	32	36.0	4.2		9.0		57.8	12.6	Sj	9.8		45.4	14.3	
8.7		55.8	32.7	L	7.3		46.5	17.4	B	9.8		48.8	53.0		9.8	45	12.0	54.4		9.8		54.0	7.0	
9.5	6	10.2	30.5		10		52.0	21.4		9.4	33	34.5	44.3		8.8		13.1	0.1	M	10	0	3.0	7.9	
9.5		10.7	33.0		9.4	20	7.6	27.0		9.1		34.8	24.9		9.3	46	9.1	45.7	R	9.8		3.0	49.4	
9.1		17.4	41.1	K	8.5		12.6	33.3	K	9.5		38.6	7.7		9.8		9.1	42.8		9.9		14.7	41.2	
10		35.7	20.8		9.1		15.4	42.6	B	8.9		52.2	23.1	M	8.8		28.8	2.6	K	9.4		19.5	9.5	
9.8		39.4	42.4		8.8		18.9	23.8	B	9.5		57.6	15.3		9.2		35.0	2.6	WC	9.4		20.4	35.5	
9.8		44.7	20.3		9.8		19.3	17.4		9.5	34	5.3	18.8		9.1		38.1	21.5	M	9.3		31.6	35.4	M
9.6		49.6	16.9		7.0		21.8	11.7	B	8.0		9.8	54.1	K	9.6	47	0.6	1.1		7.8		49.0	19.3	Sj
9.7		50.2	28.1		9.8		24.7	3.0		9.8		15.7	40.5		8.0		12.5	39.0	K	9.8		56.4	3.0	
9.7	7	11.1	27.1		9.8	21	14.3	7.0		9.8		16.4	10.0		9.1	48	10.1	39.3		9.8		56.5	38.5	
9.6		10.9	4.9		8.7		36.5	42.5	K	9.3		20.9	54.4		10		17.4	36.1		9.8	1	3.2	50.1	
9.8		30.9	59.0		9.6		46.2	5.4		9.4		23.4	15.3		9.8		45.8	6.4		9.6		26.3	25.7	
9.1		33.3	41.2	K	9.5	22	0.5	33.6		9.3		23.5	21.1	K	9.1	49	6.2	53.7		9.2		28.1	27.4	
10	8	2.5	3.2		10		18.0	21.8		9.5		38.8	34.5		10		23.7	52.5		8.2		32.4	4.3	K
9.7		45.9	20.7		9.7		20.8	20.9		9.7		39.3	36.1		9.5		47.6	14.2		9.5		46.5	15.5	
9.5	9	5.0	0.1		10		40.6	51.2		9.7		43.3	18.9		9.6		50.4	45.2		9.8		46.6	54.4	
9.5		58.7	17.0		9.4		43.8	7.0		8.0		40.4	41.8	K	8.3	50	20.6	47.5	K	9.5	2	20.3	25.7	
9.8	10	4.1	30.3		9.6		47.2	53.3		9.0		52.7	38.7	K	9.5		33.4	35.1		9.8		24.8	5.8	
9.8		11.7	51.6		9.7		52.6	25.4		9.2	35	38.9	55.0		9.8		36.2	19.9		5.7		51.6	16.3	K
10		20.8	33.5		9.1		58.5	0.1		9.8		43.3	12.0		8.9		46.6	40.2	K	8.9	3	0.8	23.1	R
8.0		35.7	52.0	K	8.5	23	43.7	34.4	L	9.3	36	26.8	21.2		10	51	6.7	53.3		9.4		7.2	16.1	
9.7		42.4	32.9		9.3		45.4	2.4		8.7		31.0	24.3	K	10		17.6	56.3		9.8		19.8	40.7	
9.5	11	10.7	32.1		10		57.5	25.3		8.7		34.3	26.1	K	9.7		20.5	30.8		10		42.4	22.7	

5004: 32°20 42′43″4 B_4, Ep. 1871.64

6201—6260

m	22h m	s	—12° ′	
9.0	3	51.3	3.9	R
9.9	4	13.2	48.8	
10		20.5	2.6	
9.0		28.2	18.9	R
9.1		54.8	8.0	R
9.7	5	3.2	31.4	
9.1		20.1	52.3	
9.5		34.7	49.4	
7.0		40.4	38.4	K
9.0		49.5	0.7	R
9.9	6	6.7	56.6	
9.0		10.5	18.7	K
10		14.1	19.6	
9.4		16.6	51.6	
10		19.7	54.1	
10		35.2	58.7	
10		36.0	4.4	
8.2		45.2	58.3	K
9.2		54.6	2.0	K
9.6	7	5.0	12.7	
10		58.8	35.1	
9.4	8	10.5	20.3	
9.2		32.3	57.9	
9.0		44.4	23.2	K
10		58.8	30.2	
9.9		59.6	49.3	
7.5	9	0.8	21.8	K
9.6		20.1	5.8	
9.8		41.0	6.0	
9.4		47.8	38.6	
9.0		53.3	57.5	K
9.5	10	3.0	6.2	
9.5		46.4	48.9	
9.7		50.0	29.4	
9.3		51.3	49.2	K
8.0	11	11.2	16.6	Sj
9.7		15.7	0.9	
9.7		17.5	2.4	
10		40.4	29.1	
8.7		49.9	38.3	K
9.9	12	16.2	4.2	
9.5		28.4	43.4	
8.2		31.4	56.8	K
9.2		32.1	38.5	
9.3		51.9	39.4	
9.0		56.4	59.2	K
9.2		57.2	45.6	
9.6	13	16.4	27.9	
9.3		20.3	29.2	
9.8		28.3	7.1	
9.1		37.9	54.9	K
9.2		41.5	44.2	
9.8		50.5	21.4	
9.4	14	26.4	57.4	
9.8	15	43.5	29.5	
9.8		48.6	20.0	
10		54.2	6.2	
9.5	16	2.3	42.3	
9.6		51.8	18.4	
8.5	17	7.3	7.4	K

6261—6320

m	22h m	s	—12° ′	
9.6	17	16.4	2.1	
9.0		38.8	48.6	K
10		46.9	59.6	
8.5		47.3	38.6	K
10		54.4	2.3	
9.8		59.3	11.0	
9.5	18	9.1	24.8	
9.5		14.8	55.7	
8.3		29.3	47.1	K
9.8		48.2	33.2	
8.3	19	7.4	4.9	K
9.0		14.8	39.2	
9.8		24.3	29.6	
8.5	20	23.9	37.4	K
8.8		49.4	5.9	Sj
9.7		51.4	56.0	
9.1	21	3.9	58.2	K
8.8		10.4	25.9	L
10		12.4	47.5	
9.8		34.9	24.7	
9.0		40.9	9.0	
9.0		58.9	15.7	K
9.8	22	1.4	57.5	
8.8		3.6	27.3	K
9.1		4.7	15.7	K
9.5	23	10.4	1.9	
9.8		24.0	43.1	
9.3		41.5	54.5	
10		55.0	59.4	
9.7	24	4.5	44.5	
9.8		10.0	17.8	
9.5		49.5	41.5	
9.6	25	18.7	27.9	
10		36.3	25.1	
9.3		48.0	59.8	
9.3		56.0	16.9	
10	26	0.0	10.3	
9.5		4.5	49.6	
9.0		22.5	54.0	K
9.4		46.3	2.4	
9.8		47.6	15.5	
9.1		56.8	7.5	
9.2		57.6	48.8	
9.9	27	6.1	42.5	
9.8		10.1	6.8	
9.6	28	5.8	33.0	
9.2		17.6	20.7	K
9.3		37.0	47.1	
9.4		39.1	33.0	
10		42.6	1.5	
9.7		45.4	31.0	
9.8	29	3.1	30.2	
9.8		9.1	48.9	
9.1		9.8	57.5	K
7.7		24.0	28.6	Sj
9.5		28.6	18.3	
9.5		45.6	47.2	
9.4		48.6	12.7	
9.6	30	37.5	30.8	
9.9		48.8	1.6	

6321—6380

m	22h m	s	—12° ′	
10	31	38.4	51.1	
9.9	32	39.9	46.8	
8.3		41.0	21.4	K
9.7		45.7	45.5	
10		48.7	51.5	
9.4		56.1	30.9	
7.2	33	44.7	58.9	K
9.3	34	23.1	19.7	
9.8		23.3	50.7	
9.3		30.7	15.6	
9.9		40.3	41.9	
9.1	35	4.4	33.9	
9.2		20.1	12.3	
9.3	36	8.6	31.0	
10		10.2	58.2	
8.7		10.7	15.0	K
9.4		14.4	8.0	
9.3		28.8	53.3	
10	38	7.3	46.4	
9.3		22.4	56.2	
9.4		26.9	56.2	
8.3		27.9	17.8	K
8.5		29.4	54.8	Sj
9.5	39	2.4	45.0	
9.7		9.1	19.6	
9.8		21.8	31.2	
10		32.2	2.2	
9.8		43.6	4.4	
9.5		46.7	8.1	
9.5	40	4.2	10.5	
9.2		21.8	36.2	
9.6		31.3	1.5	
8.9	41	8.0	35.6	Sj
9.5		9.5	59.5	
9.3		10.1	24.7	
9.5		26.0	44.4	
7.8		47.8	7.0	K
9.3	42	13.3	13.7	
9.6	43	26.9	7.3	
9.9		28.8	26.7	
9.4		33.9	7.2	
10		39.8	6.9	
9.5		46.3	49.5	
9.0		57.2	48.0	Sj
9.3	44	44.4	0.8	
10		55.0	43.9	
9.1	45	10.1	24.7	
9.6		16.3	45.9	
9.2		16.8	34.7	
9.3		30.8	32.7	
5.9		50.4	22.8	K
9.7	46	20.3	5.6	
10		24.1	38.5	
7.0		28.1	57.5	K
9.7		53.6	28.2	
9.8		56.5	5.4	
9.6		57.6	15.8	
9.7	47	6.9	9.9	
9.9		17.2	37.3	
9.5	48	19.0	12.3	

6381—6440

m	22h—23h m	s	—12° ′	
9.1	48	27.7	55.4	
9.7		46.2	44.5	
9.9		48.0	8.9	
9.3	49	3.8	5.9	
10		7.9	3.3	
10		28.2	56.6	
9.7		41.4	1.5	
9.5		56.8	1.0	
9.3	50	29.3	56.4	
9.3	51	33.8	38.5	
9.7	52	10.2	5.3	
9.6		12.3	42.3	
9.7		15.7	9.4	
9.5		37.3	45.4	B
9.4	53	2.2	52.6	
9.0		41.1	0.5	K
10		49.9	47.5	
9.0		52.3	51.8	K
9.8	54	5.9	21.0	
9.2		33.7	6.5	
10		36.1	39.2	
8.5		46.8	5.2	K
9.3		50.3	2.7	
8.0		55.8	2.7	K
9.1	55	6.0	0.9	K
9.7		19.9	31.5	
9.5		20.6	40.1	
10		20.7	12.7	
9.4		38.4	26.3	B
9.4		55.9	41.2	
9.5	56	36.4	56.4	
9.2		46.0	49.0	
8.5		51.7	57.3	Sj
9.5		53.6	30.3	
9.7	57	9.7	27.8	
9.7		11.0	22.3	
9.7		12.5	23.2	
9.5		33.9	3.2	
9.2		54.6	11.9	
9.8	58	9.5	48.2	
9.6		22.0	58.0	
9.6		35.4	40.8	
9.2		43.7	20.6	
9.5	59	10.0	54.7	
9.1		37.9	38.1	K
7.8		47.9	35.3	K
10	0	9.4	33.7	
9.6		14.9	24.6	
8.5		44.9	22.8	K
9.5		45.0	35.1	
9.6		49.1	24.5	
9.6	1	13.5	21.4	
9.0	2	3.6	49.6	K
10		6.0	19.6	
9.0		9.5	52.2	K
9.2		35.1	27.6	
9.3		38.6	27.5	
9.0		45.5	16.0	
9.5		59.6	30.0	
10	3	9.5	8.2	

6441—6500

m	23h m	s	—12° ′	
10	3	21.3	50.4	
10		51.8	29.9	
9.7		53.7	38.4	
6.9	4	25.0	43.0	K
10		53.6	15.6	
9.5	5	11.3	56.1	
10		29.6	18.4	
9.5		55.6	8.0	
9.1	6	2.8	32.4	
9.2		30.5	25.3	
9.5		58.4	30.3	
10	7	28.7	52.1	
7.7		47.1	21.4	L
7.9	8	1.8	25.5	K
9.7		19.2	44.4	
9.1		40.6	39.0	
9.2	9	8.7	45.7	K
10		11.9	16.5	
9.4		30.8	31.6	
9.8		36.6	32.9	
6.3	10	6.2	29.9	K
8.5		19.9	3.3	K
9.5		31.2	32.2	
9.8		36.8	6.1	
9.3	11	14.3	56.3	K
8.9		19.5	35.6	Sj
9.6		23.4	4.5	
7.2		27.9	57.6	K
9.4	12	1.7	53.0	
10		30.8	14.4	
9.8		33.9	5.8	
9.8	14	28.4	32.9	
9.9		39.4	51.7	
9.8		53.6	9.1	
9.5		57.6	13.8	
9.6	15	17.2	25.6	
9.9		38.0	6.8	
9.4		59.6	17.1	
9.9	16	5.4	42.2	
9.5		24.9	43.3	
9.8		30.6	22.5	
9.1	17	27.9	39.0	
10		42.7	2.6	
9.5	18	4.9	36.8	
9.1		15.3	24.7	
9.8		28.9	59.4	
9.3		44.0	25.9	
9.5	19	16.7	31.4	
9.5		18.7	40.0	
9.1		19.6	20.3	
9.6		32.7	16.2	
9.5		37.0	53.9	
9.5		47.1	59.8	
9.8		54.0	57.5	
10	20	6.6	5.8	
6.3		31.8	14.8	K
9.4	21	15.2	32.3	
9.5		25.3	9.0	
9.4	22	9.8	41.7	
9.8		12.7	33.9	

6501—6520

	23h	−12°	
m	m s	′	
9.5	22 13.6	45.4	
9.2	30.0	42.2	K
9.8	23 3.3	34.4	
9.5	30.2	6.7	
8.3	45.8	59.6	K
9.5	24 2.2	40.5	
9.6	12.5	29.0	
7.5	19.7	44.6	K
9.0	38.2	46.2	
6.7	42.1	20.5	L
9.8	42.4	6.5	
9.4	50.6	29.6	
9.0	25 7.3	7.6	
8.6	27.6	47.0	K
9.5	28.4	33.9	
9.8	44.4	48.3	
9.8	26 12.9	47.0	
10	17.8	13.6	
10	19.8	13.2	
9.2	24.4	20.1	

6521—6540

	23h	−12°	
m	m s	′	
9.8	26 28.4	47.6	
9.8	58.6	10.7	
8.0	27 42.5	22.8	K
9.4	28 19.6	51.4	
9.2	31.5	26.4	
9.7	29 37.5	42.7	
9.1	53.5	21.5	K
9.8	30 6.1	56.8	
9.7	9.5	16.1	
10	11.0	17.0	
8.6	31 36.5	20.9	K
8.8	32 4.1	45.5	K
9.4	56.6	45.3	
9.1	33 30.1	16.2	K
6.1	38.2	29.1	Sj
9.5	46.9	21.3	
9.9	47.2	3.9	
9.2	56.6	15.9	
9.2	59.4	45.9	K
9.6	34 4.2	34.0	

6541—6560

	23h	−12°	
m	m s	′	
9.5	34 28.1	16.8	
7.4	35 18.1	8.1	K
10	23.7	19.2	
9.5	26.9	29.1	
9.9	27.6	25.2	
9.8	31.2	6.0	
9.5	52.1	10.0	
9.9	56.7	15.2	
10	36 17.7	3.3	
9.5	25.3	20.0	
9.4	32.6	31.6	
9.5	45.8	25.0	
10	37 41.1	2.6	
9.2	38 16.3	22.0	
9.9	40.7	16.0	
9.3	39 3.8	21.5	
9.5	6.6	45.2	
9.1	24.4	33.4	K
6.0	47.3	42.8	Sj
9.2	51.8	44.8	

6561—6580

	23h	−12°	
m	m s	′	
9.5	40 9.1	29.8	
9.3	9.3	14.3	
9.2	24.8	11.4	
9.5	42.3	43.6	
8.0	59.8	18.7	K
8.8	41 10.8	34.6	K
9.1	22.9	16.2	K
10	35.3	1.4	
10	42 11.9	19.7	
9.6	17.5	23.3	
8.5	43 13.1	25.0	Sj
9.8	20.4	37.0	
9.5	29.6	40.4	
10	44 0.0	40.6	
10	4.0	29.3	
9.6	12.7	58.2	
9.6	17.3	7.3	
8.5	41.9	31.5	K
7.3	45 20.1	49.3	Sj
9.5	46.0	9.5	

6581—6600

	23h	−12°	
m	m s	′	
9.5	45 52.8	59.8	
9.0	46 2.5	45.7	Sj
9.5	8.4	3.7	
9.1	24.6	22.6	K
9.3	47 34.5	47.3	
8.6	48 0.1	45.8	Sj
9.2	2.8	12.6	
9.0	34.0	2.0	
10	42.0	20.0	
9.8	49 16.1	29.6	
9.2	56.0	3.2	
7.8	50 49.6	15.9	K
8.6	51 14.4	29.7	K
8.0	35.7	44.6	Sj
9.2	43.4	13.3	
9.3	52 38.3	50.4	
10	53 19.3	33.4	
8.2	29.7	37.9	K
8.7	45.8	46.4	K
8.7	54 48.3	46.4	K

6601—6605

	23h	−12°	
m	m s	′	
9.8	55 51.8	36.5	
8.3	55.6	44.8	Sj
9.6	56 30.2	11.0	
9.5	38.3	40.2	
9.4	38.4	35.7	

6606—6609

	23h	−12°	
m	m s	′	
9.5	56 43.0	41.6	
9.6	49.2	1.2	
9.2	57 31.9	27.6	
8.7	58 2.4	39.0	K

6610—6613

	23h	−12°	
m	m s	′	
10	58 38.5	29.1	
8.5	54.4	49.1	Sj
10	59 15.4	19.8	
9.1	20.9	58.2	K

6614—6617

	23h	−12°	
m	m s	′	
10	59 28.6	47.0	
9.7	49.0	31.2	
9.4	53.6	56.6	
7.6	59.1	25.3	K

Zone −13°

1—20

	0h	−13°	
m	m s	′	
9.7	0 13.4	6.6	
9.4	25.4	17.2	
9.6	49.4	27.5	
10	1 7.9	54.5	
9.8	9.4	29.9	
10	13.8	3.0	
9.3	36.4	16.4	
9.3	2 1.9	25.2	
10	15.9	16.9	
9.4	16.1	13.1	
9.6	31.4	50.0	
9.2	52.5	12.3	
6.0	3 17.4	23.2	K
9.1	17.7	1.1	
9.3	28.4	42.8	
9.4	43.6	33.0	
9.5	57.8	59.8	
8.9	4 2.4	50.2	K
9.6	28.3	0.5	
10	45.4	50.9	

21—40

	0h	−13°	
m	m s	′	
10	4 49.9	23.7	
9.6	58.3	0.2	
9.7	5 7.0	28.6	
9.5	23.0	24.1	
9.7	6 19.9	0.2	
9.7	38.9	44.6	
9.0	51.5	7.5	
9.8	55.6	24.1	
9.4	57.6	16.1	
9.7	7 16.2	56.4	
7.3	17.8	33.3	K
9.4	38.4	51.6	
9.8	54.5	42.0	
8.8	8 0.1	23.4	
8.3	1.7	51.5	
9.3	5.0	42.4	
9.0	7.0	56.3	
9.5	13.4	41.3	
9.2	42.3	14.6	
8.7	9 40.7	52.0	K

41—60

	0h	−13°	
m	m s	′	
9.8	10 11.7	46.8	
9.7	26.9	17.9	
9.6	28.7	10.6	
9.5	48.4	26.3	
9.2	56.5	42.8	
9.8	11 4.4	59.0	
9.6	24.6	5.8	
10	25.5	22.8	
9.8	37.5	31.6	
9.5	40.2	10.2	
8.0	12 25.3	9.7	Sj
6.8	47.9	52.2	K
9.8	13 45.7	13.7	
9.8	14 3.3	50.0	
9.2	5.2	58.0	
9.5	42.0	10.8	
9.6	15 1.8	9.3	
9.3	2.8	44.0	
9.0	11.7	6.2	K
6.5	26.1	0.6	Sj

61—80

	0h	−13°	
m	m s	′	
9.2	15 33.5	38.8	
9.8	46.7	18.3	
8.0	51.6	58.1	K
9.2	16 48.0	52.9	
10	17 12.9	43.4	
9.3	16.7	2.7	
9.8	18 12.4	59.9	
9.9	29.5	46.0	
8.5	45.0	52.7	K
9.3	52.1	10.8	
10	19 14.8	31.8	
9.5	21.9	34.5	
9.2	23.4	7.7	
9.7	27.9	36.3	
9.0	41.7	30.2	
9.8	51.5	15.3	
9.3	53.1	50.0	
9.5	20 10.2	26.1	
10	47.0	39.4	
9.3	59.4	8.9	

81—100

	0h	−13°	
m	m s	′	
9.3	21 25.2	56.1	
9.6	22 6.7	27.3	
9.8	29.0	38.9	
9.5	30.6	17.1	
9.0	49.5	9.1	
9.7	23 34.7	16.9	
9.5	42.0	8.9	
9.1	24 8.9	0.7	
8.2	46.6	5.8	K
9.3	25 3.2	14.3	
9.8	55.3	53.6	
9.5	56.0	45.8	
10	58.6	12.2	
10	26 4.0	43.3	
9.2	4.2	49.6	
9.5	58.5	23.7	
9.7	27 10.4	3.0	
9.8	23.2	36.8	
9.5	28 54.7	59.3	
9.3	29 3.4	53.4	

101—160				161—220				221—280				281—340				341—400			
	0h		—13°		0h—1h		—13°		1h		—13°		1h		—13°		1h—2h		—13°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.1	29	12.1	7.8	9.3	49	35.0	46.6	9.5	6	19.0	27.0	8.8	25	25.4	36.1	K	10	45	52.6	16.4	
9.7		29.5	13.4	9.1		46.5	48.7	K	9.0		20.1	10.7	9.7		39.7	14.0		8.8		56.3	5.6	K
9.3		38.7	36.6	9.4	50	8.4	33.8		9.9	7	34.9	15.0	8.8	26	5.4	27.8	K	10	46	8.1	15.9	
9.3	30	20.9	48.7	8.2		20.3	1.7	B	9.7		40.5	14.6	9.9		15.6	8.4		9.7		9.8	39.4	
9.4		57.3	36.5	9.4		38.6	45.9		9.5		42.9	36.5	9.8		30.2	46.9		9.4		26.0	17.5	
9.3	31	18.8	40.1	9.8		57.4	54.7		10		44.6	19.5	9.8		42.5	14.8		8.5		30.4	10.1	K
10		27.2	15.3	10	51	8.4	16.3		9.1		46.1	11.8	9.8	27	19.3	15.6		8.7		36.5	57.7	K
9.0		38.6	6.8	10		16.1	28.4		9.1	9	14.8	17.7	9.8		31.2	24.6		10	47	34.4	10.3	
9.1		46.5	20.2	10		17.2	32.4		9.5	10	8.0	31.2	10		43.9	24.2		9.8	48	22.1	5.6	
9.3		56.2	19.6	9.3		43.4	59.3		10		28.2	56.7	10		53.7	18.7		8.2		26.3	21.9	K
9.5	32	2.4	10.7	9.1		45.4	15.2		8.0		32.0	6.3	K	9.3	28	26.6	8.2		8.8		28.6	9.5	
9.8		31.5	36.5	9.3	52	33.1	1.7		9.2	11	14.7	3.9		9.1		39.3	12.2		9.5	49	20.9	51.8	
8.8		38.6	52.7	9.8		39.3	48.0		9.5		17.4	27.8		9.4	29	10.6	35.3		10	50	32.0	16.4	
9.5		53.1	22.8	9.9	53	12.8	33.3		9.8		35.9	23.1		8.3		15.5	28.5	K	9.5		42.9	28.9	
9.3	33	23.6	2.6	9.4		33.8	30.7		9.8		46.6	47.9		10		56.2	46.8		9.7	51	1.6	36.2	
9.4	34	6.5	58.8	9.8		39.9	42.5		9.1		48.4	24.5		7.8	30	13.6	28.5	K	9.9		33.5	6.4	
8.5		10.2	29.2	K	9.2		59.4	30.8	9.5	12	11.4	28.5		8.3		19.2	10.7	K	9.5		36.8	47.8	
9.5		34.2	26.8		9.5	54	10.1	28.0	9.6		35.7	15.5		9.2		30.3	51.7		10		48.9	14.2	
9.8		43.3	11.1		8.8		18.1	11.7	9.5		52.1	49.8		9.4		33.7	19.1		10	52	19.4	19.9	
9.5		50.6	11.5		10		43.7	4.9	9.8	13	26.5	13.2		8.9	31	31.1	22.7	K	10		47.5	16.3	
9.4	35	21.8	24.3		9.5	55	7.4	52.3		8.4		49.0	30.2	K	9.9		48.6	19.0		9.0		51.8	41.5	
9.2	36	5.7	46.9		10		16.7	0.0		9.8	14	20.5	5.8		9.6	32	5.3	50.2		9.2		56.2	34.5	
9.4		45.1	49.2		9.9		27.7	1.3		9.0		47.6	6.1		9.5		16.1	26.8		9.0	53	42.8	41.0	
9.8	37	5.4	26.3		9.8		29.0	57.7		9.1		55.7	50.2		9.7		41.8	56.9		8.5		43.7	34.7	K
9.8		17.1	26.7		10		34.8	7.6		9.5	15	3.6	2.1		9.2	33	9.6	27.8		9.4		49.2	59.3	
9.5		45.9	14.0		9.5		36.1	18.9		8.9		6.8	12.7		8.9		40.2	9.7		9.2	54	32.3	22.1	
9.5		46.1	28.7		9.5		51.5	50.7		10		34.5	18.1		8.3		43.9	43.2	K	9.0		48.4	43.2	
6.3	38	11.8	39.9	K	9.9		54.9	9.0		10		49.1	31.7		10	34	1.8	43.0		9.4	55	3.5	15.7	
9.3		19.7	49.2		9.7	56	16.4	42.3		8.0		49.7	43.5	K	8.9		8.8	39.2	K	8.6		31.0	50.5	L
9.4		23.7	52.9		9.3		24.0	23.5		9.4	16	13.2	34.1		8.3		58.2	22.3	K	9.2		37.5	18.8	
9.5		38.4	1.9		9.7		30.5	48.5		10		25.0	23.2		9.1	35	8.9	56.6		10		49.1	19.6	
9.8		41.7	33.5		9.3		35.5	2.3		9.3		25.3	48.2		8.4		23.0	3.3	K	9.5	57	6.3	34.0	
9.4		52.5	37.0		8.8	57	23.6	6.9		9.8		27.7	4.3		9.5	36	49.5	50.6		9.6		29.2	6.1	
10	39	5.7	41.0		9.9		44.5	54.3		9.1		57.1	28.6		8.4		50.7	52.6	K	9.1		31.8	25.6	
9.5	40	1.8	39.0		8.5		57.9	11.7	K	9.0	17	15.6	31.2		9.3		57.0	3.7		10	58	11.6	33.8	
9.5		48.0	5.1		7.5	58	11.2	41.1	K	8.7		19.6	19.6	K	9.9	37	3.5	49.9		9.4		22.4	45.5	
9.2	41	4.6	41.5		8.7		42.4	49.6	K	9.6		44.6	16.1		8.8		29.3	23.3		9.1		27.9	31.8	
9.0		20.4	26.0		9.5		46.8	27.7		9.9		46.9	11.4		9.8		49.1	4.3		9.9		30.3	7.6	
9.5	42	42.3	49.5		10		51.6	56.6		9.8	18	43.9	11.1		10	38	26.6	47.2		10		46.6	38.3	
9.3	43	34.2	55.6		9.7		54.3	20.4		9.8		45.3	13.4		9.3	39	53.9	26.0		9.6		52.9	34.2	
8.0		50.3	42.7	K	9.3	59	38.4	49.6		9.5	19	10.8	34.1		9.1	40	35.5	30.3		9.0	59	20.7	1.6	
8.5	44	0.9	54.3	K	9.3	0	10.2	58.5		6.0		42.4	48.6	K	8.1		38.1	55.6	K	8.7	0	5.4	29.7	
9.5		7.4	59.3		9.5		16.6	50.3		9.5		54.3	39.0		10	41	0.0	24.0		10		22.6	24.3	
9.4		16.2	33.9		9.5		44.1	26.2		9.1	20	28.4	5.9		9.2		11.3	31.0		9.2		42.4	40.7	
9.4		34.8	14.2		9.2	1	31.1	19.1		9.6		34.8	35.3		9.6		17.9	15.1		9.6		51.7	46.4	
8.0	45	23.3	43.6	K	9.4		55.2	4.2		9.5	21	5.1	2.8		9.4		22.1	14.5		8.6	1	13.0	1.7	L
10		28.7	30.6		9.3		56.2	12.0		9.0		40.3	33.5	K	10		27.0	25.6		9.5		13.3	18.6	
10		47.0	36.1		9.3	2	31.7	47.9		9.4		50.1	14.5		10		56.2	52.7		10		31.5	17.1	
8.9	46	23.9	46.8	K	9.5		31.9	7.0		9.0	22	24.6	54.6	K	9.8	42	4.5	30.6		10		51.3	21.9	
9.0		26.8	35.2		8.9		39.7	15.2	K	7.3		32.8	58.2	K	9.5		31.3	55.2		10		58.7	31.7	
9.3		40.7	0.2		10		55.6	36.1		9.8		47.4	50.8		9.5		55.4	3.5		9.8	2	17.9	27.5	
9.5		41.9	44.8		10	3	18.0	13.1		9.1		57.9	0.4		8.0	43	1.5	23.9		8.5		49.4	53.8	
9.7	47	22.3	14.5		10		20.2	26.3		8.7	23	27.0	43.7	K	9.2		3.6	36.0		10	3	11.7	23.2	
9.4		42.7	37.9		10		20.3	34.5		9.1		36.1	12.3		7.0		10.7	36.8	K	9.9		12.1	37.5	
7.7	48	13.8	20.5	K	9.5		36.0	48.0		10	24	19.5	37.6		7.8		23.3	3.6	K	9.5		23.5	34.6	
9.7		24.0	31.2		9.5	4	19.4	18.2		7.8		27.5	0.2	K	9.4		38.6	17.6		9.1		24.0	48.9	
9.3		35.0	48.4		7.2		20.2	37.0	L	9.7		44.8	16.7		7.2	44	36.3	57.0	K	9.8		29.8	59.9	
9.8		45.5	56.0		9.3	5	12.6	58.3		9.5		57.9	57.3		8.0		46.2	2.8	K	9.5		33.2	59.8	
9.0		51.1	17.9	K	9.8	6	2.5	11.8		9.5	25	6.0	52.3		9.7		55.7	35.4		9.8		37.6	19.0	
9.5	49	30.1	37.8		9.5		10.6	44.8		8.8		20.9	23.0		7.8	45	37.3	26.7	K	7.0		44.1	36.7	K

401—460

m	2h m s	−13° ′	
9.8	3 58.0	30.8	
8.8	59.0	8.0	K
8.4	4 18.0	30.3	K
9.8	36.5	8.1	
8.3	47.1	35.2	K
10	5 13.3	48.1	
9.5	19.8	59.4	
10	24.9	5.0	
9.5	59.6	32.5	
9.5	6 36.5	7.2	
8.8	39.9	58.0	L
8.6	7 34.7	35.4	L
9.0	52.8	45.9	
9.0	8 9.0	2.3	K
9.1	16.6	32.4	
9.8	32.7	38.1	
9.3	33.4	17.9	
9.1	9 32.9	48.0	
8.0	48.1	7.0	K
8.5	10 32.3	21.5	K
9.0	46.0	24.1	
8.6	11 10.3	18.3	L
10	46.2	25.5	
9.7	12 20.5	9.0	
10	22.3	56.5	
9.9	33.7	1.0	
8.0	39.1	25.7	K
9.6	13 19.6	56.9	
8.8	14 4.9	36.3	
9.4	13.7	54.3	
10	15 22.9	31.5	
9.5	40.0	14.8	
9.3	44.5	41.0	
8.7	51.4	17.8	K
9.3	16 23.5	38.4	
10	31.7	50.2	
9.3	58.3	27.1	
9.0	17 0.2	50.6	
9.2	23.2	58.2	
7.0	29.8	57.0	K
9 3	18 33.9	11.8	
9.4	48.5	10.1	
10	19 0.9	4.3	
10	5.4	51.3	
9.7	10.3	54.6	
9.2	23.1	37.8	
9.7	26.5	17.1	
9.5	34.4	54.3	
9.0	35.2	29.6	
9.5	20 35.4	52.1	
10	44.0	27.4	
9.6	54.6	58.5	
9.5	21 5.9	46.5	
9.6	16.2	36.7	
9.6	19.7	38.3	
8.5	25.9	16.7	K
6.8	22 25.1	33.8	B
9.5	28.0	12.2	
9.6	28.1	57.2	
9.1	24.5	3.1	

461—520

m	2h m s	−13° ′	
8.8	22 35.2	36.1	K
8.0	50.7	54.0	K
9.2	23 1.0	26.5	
8.7	20.6	56.3	K
8.9	25.0	22.1	
9.5	40.7	33.1	
9.8	41.7	9.4	
8.8	24 21.5	48.3	
10	51.2	32.1	
9.9	25 7.6	27.2	
9.5	11.3	12.6	
9.5	44.5	22.5	
8.9	49.7	4.6	
9.5	53.1	56.5	
9.9	26 13.1	15.8	
9.8	24.4	44.3	
9.5	25.0	11.5	
9.9	33.4	48.0	
8.5	45.1	47.2	
9.5	52.7	5.8	
8.5	27 1.1	35.2	
9.1	11.6	1.0	K
8.8	36.0	23.2	K
9.8	48.7	23.7	
10	52.8	9.6	
10	28 8.1	35.4	
8.8	26.2	24.9	
10	27.8	14.0	
10	45.0	31.5	
9.5	51.9	36.5	
10	29 6.0	15.0	
7.5	22.8	32.0	K
8.8	56.2	51.9	K
9.8	30 50.3	39.8	
7.3	53.6	45.8	K
9.5	31 23.4	32.9	
8.8	26.0	38.9	
8.3	29.6	59.7	K
9.7	38.3	4.2	
7.8	58.0	37.7	
9.9	32 2.9	25.5	
8.1	31.4	57.4	K
9.2	33 13.2	11.2	
10	16.4	56.5	
9.4	24.8	31.2	
10	25.3	51.1	
9.3	34 8.3	15.7	
9.7	12.3	58.2	
9.1	13.7	59.8	
9.6	19.4	2.9	
8.7	23.9	10.8	
9.8	35 9.8	47.5	
9.1	50.5	42.3	
9.2	36 2.1	42.6	
9.3	7.9	48.4	
7.3	37 13.0	6.3	K
9.1	29.2	36.6	
10	38 7.2	14.2	
8.8	12.1	10.2	
10	12.7	8.0	

521—580

m	2h m s	−13° ′	
10	38 59.0	48.1	
9.5	39 17.6	19.7	
9.5	34.1	1.2	
9.2	40 1.5	46.0	
8.3	3.8	57.1	L
9.4	42.6	50.0	
9.9	43.6	52.8	
9.2	46.1	0.8	
9.0	46.7	16.6	
6.3	59.2	4.0	K
9.5	41 6.6	9.4	
9.1	15.2	15.2	
9.6	17.6	19.9	
10	31.1	41.1	
8.9	37.6	57.2	
9.5	42.6	51.4	
10	42 18.3	32.1	
9.4	43 45.1	46.7	
9.5	56.0	17.6	
9.8	56.1	14.9	
9.7	44 22.6	16.0	
10	58.7	47.5	
8.5	45 18.5	41.3	K
5.8	33.7	21.6	K
9.9	39.6	56.4	
9.0	46 0.8	41.4	
9.6	4.1	1.6	
9.5	6.2	20.8	
9.4	13.5	3.4	
9.2	40.0	58.6	
9.3	47.2	3.5	
9.0	47 4.3	57.1	
10	12.8	27.1	
9.1	28.2	46.5	
9.3	48 25.8	46.8	
9.3	49 12.4	27.7	
9.3	30.9	26.9	
8.3	52.9	49.8	K
9.5	50 19.3	16.4	
8.5	28.6	54.3	K
9.9	49.8	45.7	
9.2	51 0.5	9.1	
8.0	30.1	23.2	K
8.3	52 5.2	55.7	K
9.0	18.7	9.2	
10	31.3	2.9	
9.4	51.6	38.5	
9.8	53 9.1	36.5	
10	9.9	6.0	
8.0	18.2	38.3	K
10	39.8	11.5	
9.1	54 25.6	35.0	
9.5	55 6.6	32.9	
9.8	13.9	5.9	
8.0	22.1	12.2	K
9.8	54.1	17.0	
10	56 16.5	17.0	
8.9	55.4	43.3	
9.5	57.8	48.6	
9.7	57 3.7	14.1	

581—640

m	2h—3h m s	−13° ′	
9.5	57 4.4	7.5	
9.4	9.5	59.8	
9.5	42.3	44.7	
9.0	59.4	24.2	
8.7	58 24.3	17.1	K
9.3	35.3	59.0	
9.0	36.7	38.0	
9.1	41.2	44.2	
9.3	53.3	45.4	
9.5	56.5	55.0	
8.3	59 23.9	49.1	K
7.8	49.0	52.6	K
9.0	0 15.9	3.5	
10	16.3	42.0	
10	23.8	23.8	
8.4	1 21.9	9.6	
9.1	33.5	30.9	
9.4	57.0	30.9	
8.7	2 35.1	54.9	K
9.4	59.5	9.0	
9.0	3 33.2	56.0	
9.4	34.6	13.0	
9.0	57.8	38.5	
6.3	4 13.5	49.2	K
8.9	19.8	25.6	
9.8	30.1	51.5	
9.0	5 2.0	28.0	K
9.4	6 4.7	54.3	
8.9	17.7	16.2	
9.5	35.1	15.5	
9.5	7 25.3	54.0	
9.3	29.2	29.6	
10	29.5	42.1	
9.1	8 4.9	14.9	
8.7	9.2	30.8	L
10	16.6	24.3	
8.0	24.8	31.6	L
9.5	9 27.9	15.5	
9.5	31.9	59.8	
10	10 13.4	15.6	
8.3	13.8	54.2	K
9.9	31.2	45.7	
10	11 13.0	21.0	
9.5	54.1	22.1	
9.5	57.2	48.3	
9.8	12 3.2	23.4	
10	17.9	48.3	
9.1	28.8	26.3	
9.4	33.2	2.0	
9.9	46.5	36.3	
10	13 24.7	22.5	
9.1	30.9	53.7	
9.4	14 28.7	24.4	
9.9	38.4	53.8	
8.8	15 7.8	24.4	K
9.8	12.3	51.1	
8.3	16.3	47.6	Sj
10	16 13.3	13.0	
9.5	47.0	20.9	
9.8	52.4	53.1	

641—700

m	3h m s	−13° ′	
9.5	17 5.9	59.4	
9.0	21.0	50.5	
8.8	59.8	21.9	
9.2	18 38.9	46.9	
8.5	59.5	35.0	K
10	19 6.7	40.6	
9.8	26.1	14.3	
9.3	38.9	29.2	
9.3	20 24.7	6.7	
9.8	43.6	40.1	
9.2	48.6	37.2	
10	49.1	14.0	
9.5	52.1	16.2	
9.6	52.5	7.3	
9.0	54.4	26.3	K
7.5	21 18.7	15.7	K
9.7	22.5	53.9	
9.1	28.5	30.7	
7.2	37.7	42.7	K
9.4	37.8	59.6	
9.1	22 2.1	20.4	K
6.0	45.1	10.5	K
9.5	48.6	33.5	
9.7	53.9	16.5	
9.8	58.0	36.5	
9.4	23 2.6	43.6	
9.8	3.3	23.7	
9.8	20.4	7.3	
10	36.8	46.8	
10	49.5	53.1	
9.8	52.7	42.1	
9.2	24 11.5	21.7	K
9.8	22.5	41.8	
7.5	23.2	59.7	K
8.3	46.9	13.7	Sj
9.2	25 0.2	3.0	K
9.1	37.7	35.8	
10	26 6.9	33.7	
8.8	7.3	43.3	
9.8	13.0	23.9	
8.5	33.6	29.9	K
9.5	27 6.3	17.7	
9.1	7.9	34.2	K
9.0	12.3	33.3	K
9.8	12.9	49.4	
9.3	49.6	5.8	
9.0	49.7	16.4	K
9.7	28 31.6	14.9	
9.7	35.8	12.1	
9.4	43.5	50.4	
9.8	29 13.4	15.3	
10	37.6	6.7	
8.8	50.5	48.1	
9.9	54.6	52.6	
10	54.6	56.5	
10	30 0.0	11.4	
9.8	9.0	59.2	
9.7	32.3	35.5	
9.6	51.2	1.9	
9.9	31 0.5	55.2	

701—760				761—820				821—880				881—940				941—1000			
3h		—13°		3h—4h		—13°		4h		—13°		4h		—13°		4h		—	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.8	31	0.6	42.2	9.8	46	9.9	38.2	8.9	2	26.2	28.3 K	10	19	30.2	56.5	9.6	31	51.1	2
9.7		1.4	6.0	9.8		18.0	51.0	9.8		46.3	12.5	9.5		52.6	32.2	8.3	32	13.8	3
8.7		20.3	25.7	9.4		35.6	45.5	9.5		52.5	53.1	9.0	20	28.4	1.9	9.4		15.6	1
10		43.6	38.2	9.4		55.5	1.4	9.3	3	2.1	13.8	9.5		31.2	53.4	9.7		19.1	1
10		52.2	46.8	7.8		58.6	10.0 Sj	9.6		6.1	9.5	9.0		35.7	34.0	9.5		42.5	5
9.5	32	15.1	40.7	9.4	47	8.2	36.5	9.6		10.6	22.9	9.1	21	6.1	29.7	9.8	33	11.5	2
8.7		59.2	44.0 K	9.4		16.1	0.2	9.2		48.2	56.4	8.2		14.0	47.5 K	8.2		29.9	1
10	33	18.5	13.6	9.2		39.4	37.3	9.5	4	3.3	29.0	9.2		38.7	56.7 K	9.3		40.9	2
9.9		33.1	25.6	9.4		43.8	34.5	10		36.7	6.0	10		48.8	37.4	9.4		54.9	
9.0		40.3	19.7	8.0		44.0	8.9 K	9.0		56.6	12.6	9.4		55.0	16.3	9.4		55.7	
9.8		43.2	28.8	9.2	49	31.3	10.5	10	5	16.7	3.2	9.8	22	16.0	18.7	9.3	34	2.3	3
8.8	34	0.1	5.6 K	9.8		31.7	16.7	7.8		21.2	35.7 K	8.5		17.1	59.3 K	9.0		2.8	2
7.0		1.6	5.2 Sj	9.5		43.6	45.7	8.6		31.9	8.6 B	5.8		22.5	22.5 K	9.5		37.6	5
9.2		23.4	47.8	8.8	50	0.7	45.3	8.9		32.5	18.2	9.1		45.4	0.5	9.1		56.2	1
9.7		34.8	50.8	10		10.1	44.0	9.1	6	0.7	30.1	9.2	23	3.2	17.0	9.5		59.4	3
9.0		36.8	46.4 K	9.3		10.2	45.9	10		15.9	57.3	6.8		27.1	54.4 L	9.4	35	14.0	1
9.8		55.8	18.1	9.2		15.9	7.3	10		20.3	36.2	8.3		45.7	34.8 K	9.8		41.8	3
9.8	36	20.3	22.3	8.3		45.2	48.0 K	9.6		22.1	38.2	8.3		51.5	13.5 K	9.6		49.9	
10		25.4	50.0	9.8	51	12.1	15.3	9.7		56.8	14.6	9.4	24	8.1	52.1	9.3		53.7	3
10		37.0	14.5	9.0		12.4	45.9 K	9.4	7	7.7	12.3	9.9		25.8	39.7	10	36	36.5	4
9.3		47.0	26.9	3		16.2	55.6 K	9.6		27.6	34.4	8.8		32.4	40.4 K	8.5	37	23.9	1
9.5		52.1	43.8	9.8		27.8	13.2	neb		30.4	6.2	9.8		34.6	3.1	9.4	38	8.8	3
9.8		53.4	28.5	9.1		56.7	25.2	8.6		31.5	35.6 K	9.2		35.9	6.4	9.0		24.1	3
9.0		54.8	44.9 K	8.5	52	8.2	5.2 K	9.8		52.3	8.0	6.7		44.1	57.4 Sj	9.1		37.8	
8.5	37	21.5	51.9 Sj	9.7		14.1	30.8	9.4	8	1.9	31.1	9.0		45.6	57.2 K	9.7		49.3	1
9.1		24.6	22.3	10		48.9	47.9	9.5	9	26.3	55.3	9.4	25	2.4	12.8	9.8		58.4	2
10		34.9	18.1	9.5		53.0	26.2	9.0		34.5	44.9 K	9.5		7.7	11.3	9.2		58.8	3
9.0		39.9	49.2 K	9.0		59.3	57.4	8.0		44.0	32.8 K	9.8		14.0	6.2	9.4	39	3.6	2
8.0		59.1	55.8 K	9.1	53	27.4	20.9	9.8	10	4.8	7.8	9.8		24.1	52.3	7.7		23.6	1
9.7	38	32.0	20.1	8.4		53.6	16.1 Sj	9.4		17.5	49.0	9.0		35.7	53.8 K	9.5		37.0	2
10		38.2	38.7	9.5		56.5	52.7	9.1		39.0	11.1	9.5		58.2	3.6	8.5		50.0	4
9.0		55.2	25.3 K	10	54	24.5	7.3	8.2		42.2	50.3 K	9.2	26	6.8	28.0	8.4	40	6.2	5
8.5		55.7	47.2 K	9.5		39.7	6.4	9.8		46.8	3.8	9.3		7.5	31.4	9.6		42.7	4
10	39	5.5	27.8	9.9		41.5	12.1	9.8		56.7	2.0	9.7		15.9	26.0	10		47.0	4
10		17.3	51.5	9.1		44.9	47.4	9.0	11	12.7	58.0	9.8		30.3	27.1	9.2	41	7.8	5
9.4		35.1	2.4	9.3		56.1	33.8	9.5		46.8	47.9	9.4		42.1	45.9	9.7		32.2	1
10		40.2	40.5	9.5		56.1	9.5	8.8	12	2.6	37.5	9.1		48.6	26.1	8.6	42	14.7	3
10		53.8	14.8	9.7	55	11.1	18.9	8.8		24.7	41.0	8.7	27	3.9	14.1 K	10		28.7	4
10		56.0	5.0	9.5		31.0	27.2	8.7		49.0	15.2 Sj	10		28.6	4.4	9.1		36.7	2
10	40	24.0	22.6	10		52.3	39.0	9.8	13	5.9	21.9	9.7		44.3	53.6	10		53.9	2
9.5		47.1	47.1	9.3	56	13.6	20.5	9.1		18.9	49.6	9.1		46.1	4.6	9.4		55.5	1
9.5	41	0.0	41.2	10		15.6	34.8	9.0		26.8	48.0 K	9.8		56.0	41.8	9.1	43	1.8	2
7.3		39.0	45.3 K	9.8		52.8	37.2	9.3		40.3	5.1	9.7	28	10.2	12.2	9.8		16.8	1
10		43.9	30.2	8.8		55.1	53.3 Sj	8.3		46.8	18.4 Sj	9.1		16.3	13.6 Sj	9.0		22.7	3
8.9		46.0	58.9 K	10	57	26.0	47.2	9.0	14	24.2	21.0	9.0		17.6	4.8	9.3		29.4	2
9.8		55.3	38.0	5.9		36.2	11.5 Sj	9.8		35.6	37.5	9.3		27.0	17.2	8.5		34.3	4
8.5	42	14.1	35.5 L	9.4	58	6.4	3.4	9.4		37.2	41.8	9.0		31.5	15.9 K	8.5		41.3	5
9.1		20.8	21.0	10		10.1	37.5	9.1		44.0	27.5	9.3		38.0	2.9	9.8		50.6	2
9.5		26.7	52.2	9.0		37.2	23.7	9.7	15	2.1	33.1	9.3		57.5	12.6	9.1	44	17.5	4
10	43	32.4	10.1	9.4		54.5	24.0	9.9		59.0	48.8	9.7	29	0.0	9.9	9.1		22.3	5
10		36.9	41.0	9.3	59	46.0	23.0	9.4	16	33.4	23.5	9.1	30	22.4	26.3	10		34.6	2
9.7	44	7.8	14.6	8.5		47.3	36.2 K	9.8		46.7	52.2	9.4		24.1	46.8	10		44.3	2
10		8.6	51.7	10	0	14.2	28.1	9.3		47.5	30.4	9.3		27.5	24.7	9.1		44.7	5
10		31.7	59.4	8.2		36.5	3.2 Sj	9.4		49.2	4.0	9.1		34.2	56.6	9.8		52.2	2
9.7		48.7	58.9	9.4		49.2	51.4	9.8		57.6	58.4	9.8		58.2	21.5	9.0		57.1	1
10		53.4	1.0	9.4	1	24.7	10.0	10	17	30.8	41.2	9.8	31	5.3	39.7	8.7		57.6	3
9.0		54.7	11.5	9.4		28.0	26.6	9.0		31.5	7.0 K	7.3		16.3	19.2 Sj	8.9		57.9	4
9.5	45	26.6	15.7	9.1	2	2.7	32.3 K	9.0	18	35.5	7.8 K	8.0		16.8	19.4 K	9.5		58.3	5
9.2		33.2	0.3	9.5		16.1	4.0	9.5		50.1	32.5	7.8		28.7	32.7 K	9.8	45	23.2	4
9.5	46	5.7	47.0	8.9		22.3	40.2 K	8.0	19	17.0	37.0 Sj	9.0		48.4	4.6 K	9.7		26.0	

781 : gelbroth

1001—1060				1061—1120				1121—1180				1181—1240				1241—1300			
	4h	—13°			4h—5h	—13°			5h	—13°			5h	—13°			5h	—13°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.4	45 36.4	34.5		9.5	59 8.7	43.8		8.6	12 0.4	57.2	K	8.5	26 23.8	0.5	K	9.0	39 33.2	42.0	
9.4	36.5	10.3		8.3	28.8	50.9	K	10	8.7	34.8		10	45.9	4.9		9.2	51.0	1.3	
9.4	36.6	30.8		6.0	55.1	19.1	K	8.5	33.9	7.5	L	8.7	27 1.0	37.9	K	9.3	56.4	12.0	M
7.6	42.3	30.8	L	10	0 10.8	7.1		10	39.5	27.6		10	9.4	50.4		9.5	40 32.5	50.4	
8.8	47.2	45.8	K	9.5	14.0	46.8		9.0	44.2	16.5		9.0	16.6	23.2	K	8.5	38.2	6.2	M
9.8	56.5	16.6		9.5	28.9	45.9		9.5	45.5	43.8		9.0	37.1	40.1	K	9.7	41 0.7	58.8	
9.7	46 1.8	55.4		9.5	48.0	50.4		5.0	53.3	19.7	L	9.8	28 1.6	59.9		9.3	1.1	4.3	
9.0	11.4	0.5	K	9.5	48.2	39.7		8.5	58.6	44.7		10	59.2	11.5		10	5.7	57.9	
9.6	32.2	47.1		10	48.8	0.0		9.5	13 14.0	9.5		9.0	29 6.6	24.4	L	8.0	13.0	34.2	K
9.8	44.6	18.4		9.5	55.9	46.8		9.5	22.5	29.4		8.0	13.5	20.4	B	9.3	21.1	37.8	
9.3	56.9	19.9		9.0	1 17.7	37.0		8.0	52.6	32.0	L	10	13.7	10.1		9.0	22.4	12.3	M
10	47 35.1	21.6		9.8	18.7	4.0		9.0	54.1	15.5		8.5	32.0	55.0	Sj	10	41.1	20.4	
10	36.7	15.4		9.5	28.8	8.0		8.5	14 8.0	45.5		9.5	33.5	54.8		7.0	47.7	24.9	K
9.2	48 23.6	9.1		9.1	52.3	55.7		9.7	15 4.0	9.8		10	52.2	9.3		9.0	52.2	42.2	WC
9.0	39.3	22.9		8.0	2 9.7	6.2	K	7.2	12.4	54.0	K	8.5	30 25.2	45.7	K	8.5	53.0	27.5	K
10	46.8	19.4		10	25.1	53.0		9.8	31.2	18.3		9.3	48.5	20.8		9.3	54.2	6.1	K
10	51.9	14.8		9.3	38.0	48.9		10	52.7	36.2		9.5	31 3.5	22.2		9.8	54.6	52.7	
8.6	57.4	17.2		9.0	41.7	6.5	K	9.5	16 10.4	23.4		9.7	3.9	2.0		9.0	42 4.7	23.0	K
9.4	49 2.7	46.3		10	3 13.8	41.3		9.5	25.5	30.5		9.3	24.3	48.5		9.3	12.1	38.6	
9.4	7.4	14.0		10	14.1	0.7		9.5	41.5	11.4		8.0	59.0	1.5	K	10	22.1	2.5	
9.3	15.5	52.6		10	24.0	49.0		9.2	17 10.0	8.7	M	9.0	32 5.4	51.1	M	9.7	27.7	23.0	
9.5	17.2	12.9		9.6	32.8	54.8		10	20.7	32.4		9.5	10.7	26.5		10	28.3	25.2	
9.3	21.4	50.6		10	4 4.9	44.5		9.5	39.1	9.6		8.0	11.5	37.6	WC	10	44.3	45.3	
9.1	36.1	22.7	K	9.5	16.9	11.9		9.7	44.1	10.1		9.8	34.9	31.5		10	52.8	25.7	
9.5	58.0	50.7		9.5	26.9	12.8		9.5	51.9	2.5		9.9	40.2	33.7		10	43 3.0	35.1	
8.8	50 6.1	56.2		9.0	5 29.2	22.5		9.2	18 12.0	40.9		10	40.5	4.7		10	6.2	6.1	
8.9	9.6	2.9	Sj	10	32.7	5.5		9.3	39.3	52.5	M	9.8	52.7	24.8		9.8	20.3	34.0	
9.8	17.7	35.9		9.5	47.9	45.7		8.0	58.2	15.3	K	9.8	53.1	23.0		9.4	23.8	34.7	
9.0	24.7	51.8		10	53.4	57.8		7.8	19 22.8	1.9	K	8.7	33 16.2	56.7	K	10	42.1	28.2	
8.8	47.2	40.2	R	9.0	6 8.2	19.8		9.5	40.0	6.8		9.5	23.8	29.1		9.0	42.1	8.6	
10	53.8	24.4		10	24.2	22.5		10	42.5	26.4		9.0	44.9	16.1		10	52.5	39.3	
7.7	51 4.8	55.5		4.7	31.8	6.8	L	7.5	20 2.6	59.3	L	10	50.4	51.8		9.0	44 14.8	24.8	
9.1	13.8	55.9		9.1	44.7	5.6	K	9.3	9.0	6.0		8.5	34 7.2	45.5	K	9.5	16.7	58.7	
10	25.2	21.7		9.0	57.2	50.2		9.0	14.3	16.7	B	9.0	22.1	5.4		9.4	22.4	46.2	
9.8	46.4	28.6		10	7 17.8	2.9		10	44.7	30.1		9.7	42.2	10.3		10	27.6	2.5	
9.5	49.9	29.7		9.5	20.9	38.6		9.5	45.0	13.1		9.2	52.9	1.4		9.5	27.7	23.9	
8.9	55.1	3.4	Sj	8.0	32.1	13.1		9.0	53.4	55.1	K	9.5	35 5.4	51.0		9.5	37.4	48.0	
9.2	52 10.5	43.8		10	54.1	15.3		7.5	53.5	41.7	K	10	5.6	24.2		10	39.3	9.2	
9.0	13.7	10.6	K	9.5	8 4.9	41.7		9.0	21 30.0	41.5	M	7.5	28.0	3.6	K	10	46.5	18.0	
8.3	24.2	16.9	K	10	14.8	5.5		10	38.1	21.7		9.5	42.9	38.4		9.6	55.9	48.0	
9.5	37.2	41.7		10	17.7	0.1		9.0	22 8.5	39.1	Sj	9.0	45.1	7.6	K	8.3	58.0	50.4	K
10	52.4	50.7		9.5	26.2	59.3		9.3	47.1	15.8		9.5	58.2	9.0		8.7	45 3.5	56.1	K
9.4	56.8	58.1		9.7	30.5	29.5		9.5	48.3	23.3		9.5	36 15.3	46.5		10	13.7	22.9	
9.4	53 20.2	21.5		8.5	9 3.1	49.2	K	8.5	23 9.8	33.9	K	9.5	25.6	56.3		9.5	31.0	18.5	
10	48.7	21.7		9.5	17.1	47.8		10	40.6	54.0		9.7	36.2	58.0		8.3	42.3	15.9	
9.7	57.5	56.8		9.8	17.4	22.8		8.3	40.9	3.6	K	9.0	45.3	11.2		10	45.7	38.8	
7.3	54 0.7	43.6	K	9.0	27.0	9.4		8.5	44.9	36.6	K	10	37 1.3	43.3		9.0	52.9	39.4	
9.8	0.8	7.3		10	27.9	54.6		8.5	50.0	41.5	K	9.5	19.8	25.5		9.3	54.0	50.4	
9.8	24.9	40.9		9.2	40.1	13.9		8.5	24 0.1	45.1	K	9.7	35.2	41.1		9.5	46 1.5	19.4	
8.8	38.5	18.2		9.0	42.7	52.4		9.5	13.5	22.9		9.0	36.1	4.9	K	9.5	34.4	19.5	
9.0	55 4.0	5.0	Sj	9.5	54.0	11.4		8.3	15.1	51.0	K	9.5	41.4	13.4		9.6	39.0	3.1	
8.8	56 5.8	52.2	K	9.5	57.9	41.2		10	54.6	44.2		9.0	38 7.2	8.1	K	9.7	49.8	34.5	
9.7	9.9	2.8		9.4	58.6	49.8		10	57.6	29.5		9.7	25.0	1.3		8.9	59.7	30.0	
9.7	57 4.0	49.1		10	10 16.9	43.5		10	57.6	44.6		10	26.5	44.1		9.6	47 10.4	0.8	
10	15.5	6.7		9.3	22.2	19.3		10	25 1.6	29.1		9.5	33.3	9.3	M	9.2	33.3	57.6	
9.1	19.7	44.0		6.0	11 0.9	40.5	K	9.3	28.4	52.3		10	42.5	49.9		9.5	33.4	9.6	
9.0	29.6	24.7		10	3.6	33.7		9.5	36.2	47.4		10	39 8.1	37.4		10	59.3	23.0	
8.3	42.6	54.8		9.7	6.1	38.2		10	40.6	55.9		9.8	8.9	48.6		10	48 7.5	32.9	
7.9	54.9	8.0	Sj	9.8	36.7	55.5		9.2	41.4	19.7	M	8.5	17.5	15.6	M	9.4	22.4	28.5	
10	59 0.5	22.6		10	54.8	3.6		9.0	26 16.3	53.2	K	9.4	26.2	54.7		9.4	44.4	11.1	

1301—1360

	5h—6h		—13°	
m	m	s	′	
10	48	47.8	43.2	
10		50.8	3.4	
9.5		54.7	39.1	
10		56.9	59.6	
7.5	49	25.9	9.1	K
7.8	50	4.0	10.9	K
9.5		8.9	8.7	
10		17.7	0.7	
9.5		21.5	17.4	
9.2		25.0	53.8	K
10		26.9	35.0	
9.5	51	11.5	31.1	
10		33.9	49.4	
9.5		51.0	56.8	
9.7	52	3.0	50.5	
9.0	53	26.0	58.5	K
9.3		26.8	54.3	
9.0	54	3.1	17.0	M
9.2		13.0	13.0	M
9.5		24.4	28.2	
8.2		38.4	1.9	K
9.9		42.1	42.3	
9.4		50.6	35.2	
9.0	55	6.9	3.4	K
10		8.9	48.6	
10		18.8	0.4	
8.5		33.9	2.1	K
9.9		43.8	55.8	
9.5		44.0	11.5	K
10		52.7	37.9	
9.3	56	7.8	41.4	K
10		32.7	39.6	
10		50.0	20.4	
10		51.7	4.7	
9.5		58.1	56.1	
10	57	10.8	2.9	
9.7		13.4	28.8	
8.8		14.5	30.6	M
8.9		18.3	56.9	K
10		29.3	22.6	
8.0		33.7	41.4	B
9.2		38.3	55.6	
10		59.7	39.6	
8.5	58	24.8	45.0	B
9.3		27.0	9.3	
10		37.0	20.0	
9.0		41.6	24.7	M
10	59	2.6	8.0	
9.5		3.3	57.6	
7.8		16.1	14.0	Sj
10		42.1	48.2	
10		44.8	20.6	
9.0		57.1	44.1	
8.8		59.8	24.6	K
9.3	0	20.0	40.5	
10		20.6	54.3	
9.0		26.7	12.4	
10		28.8	59.8	
9.3		37.8	20.4	
9.2		44.8	22.2	K

1361—1420

	6h		—13°	
m	m	s	′	
9.2	1	2.6	11.5	
9.5		16.6	11.5	
9.5		40.2	52.1	
10		48.2	51.7	
9.0	2	14.5	4.4	Sj
8.0		35.7	12.0	K
9.0		50.0	37.3	
10	3	12.8	20.4	
9.5		14.2	53.4	
10		19.6	5.2	
10		48.2	53.4	
9.5		49.6	6.9	
10		53.0	37.8	
9.3		59.9	27.1	
8.8	4	25.5	45.9	K
10		46.9	30.1	
9.6		54.8	42.8	
8.6	5	0.2	2.6	Sj
10		6.4	8.7	
8.7		8.5	11.5	K
10		21.3	16.0	
9.5		26.4	37.8	
9.0		27.1	34.9	K
8.9		28.1	6.9	K
10		30.0	15.8	
10		44.7	13.6	
7.5		50.3	35.6	K
9.4	6	6.2	57.8	
9.7		13.3	18.8	
9.5		20.9	11.6	
9.5		31.0	43.0	
9.1		40.4	38.5	K
9.3		41.7	59.2	
9.3		48.3	58.2	
9.8		48.6	14.0	
9.0		49.2	43.9	K
8.8		53.9	32.4	K
9.0		55.8	26.1	K
9.5		56.4	40.1	
9.4	7	19.3	10.6	
9.4		27.1	51.5	
9.9		44.7	52.9	
10		47.1	54.3	
9.6		51.9	41.5	
9.5	8	10.7	32.8	
9.2		18.7	5.1	
9.4		35.9	16.7	
9.0		43.0	26.1	K
9.2		47.3	18.5	K
9.4		59.4	4.1	
5.2	9	5.8	40.4	K
10		23.3	50.6	
9.7		25.6	2.3	
9.2		29.6	3.0	K
10		37.1	17.1	
9.8		37.6	53.4	
9.2		44.3	56.1	
9.8		49.7	32.8	
9.0		53.5	49.3	M
9.2	10	0.7	56.2	

1421—1480

	6h		—13°	
m	m	s	′	
10	10	20.5	37.1	
9.9		21.4	3.1	
9.5		33.2	17.0	
9.4		40.8	40.0	
9.4		45.4	55.5	
9.4		57.1	3.2	
9.4	11	3.9	1.9	
9.4		4.0	24.9	
9.8		6.5	26.0	
10		27.6	51.4	
9.4		31.8	48.5	
9.7		34.1	28.7	
9.1		41.3	11.4	
9.4		43.5	49.4	
10		47.4	15.4	
10		55.2	12.2	
10	12	16.8	41.1	
9.2		21.2	33.8	
9.8		33.7	57.0	
9.8		38.2	16.6	
9.1		55.3	36.6	
9.3		56.1	40.0	
8.5		59.4	29.6	K
9.0		59.6	28.8	
9.4	13	3.7	18.4	
9.5		9.2	5.6	
9.8		10.4	0.0	
10		13.8	10.0	
9.8		15.6	29.2	
7.0		20.6	55.9	K
9.8		26.0	21.2	
9.1		37.1	11.1	K
9.5		42.9	20.3	
9.0	14	5.0	46.4	M
9.9		9.8	26.1	
9.0		41.8	37.0	M
8.2		43.3	58.5	M
9.5		58.0	46.7	
9.5	15	8.7	35.5	
9.5		11.8	36.8	
9.4		16.8	16.6	
9.0		17.9	30.1	M
10		23.6	18.0	
8.4		26.1	16.6	K
10		29.9	15.3	
9.7		34.4	25.8	
9.7		41.3	54.5	
10		46.5	54.8	
9.8		46.5	25.8	
10		54.9	21.5	
10	16	4.8	8.0	
9.2		18.1	53.7	
9.3		28.3	9.7	
10		37.0	20.7	
9.1		40.2	33.8	
9.1	17	12.5	40.4	
9.0		18.7	8.1	K
10		35.6	54.0	
9.5		39.1	26.0	
9.5		44.9	32.3	

1481—1540

	6h		—13°	
m	m	s	′	
10	17	45.4	5.0	
9.4		51.1	18.8	
8.0	18	13.3	9.0	K
9.8		19.3	37.5	
9.4		21.8	59.2	
9.5		23.2	7.5	
9.8		50.0	20.0	
9.6		51.6	27.5	
9.0		53.1	16.0	K
9.3	19	20.6	3.4	
9.5		31.3	39.8	
9.0		42.6	40.7	
8.5		43.8	38.4	
9.0		54.4	28.1	M
9.5	20	19.7	3.8	
10		25.8	48.4	
9.8		46.0	21.6	
9.8		50.0	48.4	
9.5		50.8	36.4	
9.8		55.5	25.6	
9.4	21	12.2	9.0	
9.5		14.9	15.3	
9.4		16.7	1.5	
7.4		18.6	4.3	K
10		21.8	34.5	
9.4		28.3	39.5	
9.1		41.4	44.4	
10	22	0.1	50.8	
9.5		14.6	14.1	
9.4		15.8	17.4	
9.4		21.5	23.8	
9.5		22.2	21.0	
9.8		46.9	41.3	
9.8	23	0.2	23.6	
10		20.6	2.1	
9.8		22.8	10.5	
9.0		28.9	41.1	K
9.2		32.0	24.6	
6.3		54.6	3.2	Sj
9.1	24	9.0	45.6	
9.0		14.8	34.4	K
9.5		21.6	53.7	
7.7		37.3	30.4	K
9.0		38.9	23.7	K
9.1		48.5	19.7	K
9.0		53.3	36.9	K
9.9		56.0	57.7	
9.6		59.2	31.5	
9.8	25	4.4	45.5	
10		17.1	24.8	
10		18.8	25.0	
9.3		21.3	37.4	
10		25.2	30.5	
9.3		43.9	57.2	
10		49.0	6.9	
8.9		56.2	12.3	
9.2	26	2.3	19.3	
9.5		4.2	14.1	
9.8		9.3	39.7	
10		11.0	46.8	

1541—1600

	6h		—13°	
m	m	s	′	
10	26	13.1	53.5	
8.8		35.4	59.6	R
9.5		44.0	20.9	
9.4		54.7	7.6	
9.0	27	0.9	14.2	Sj
8.9		4.2	33.2	
9.7		17.4	20.3	
9.2		25.9	15.3	
10		47.1	26.5	
9.5		52.0	56.1	
9.8		54.6	0.2	
10	28	19.6	34.4	
9.0		23.6	53.8	
9.9		27.3	33.4	
9.8		36.2	42.6	
8.8		44.8	10.9	K
10		58.7	11.6	
9.8	29	4.2	59.5	
9.0		4.8	50.1	
8.5		9.3	38.2	M
9.0		31.4	41.4	M
9.0		33.7	18.8	Sj
9.8		34.4	12.1	
9.8		38.1	26.7	
9.4		45.0	10.3	
10	30	0.5	9.1	
9.2		0.9	42.7	
9.1		1.4	5.1	K
8.5		3.9	40.2	L
6.0		6.0	12.0	K
9.1		12.7	20.9	
9.0		27.5	40.8	K
10		32.8	38.5	
9.0		55.1	52.5	M
9.2	31	11.7	32.1	
9.5		22.6	50.9	
9.0		23.5	20.5	M
9.7		24.3	28.7	
9.8		29.6	7.3	
8.9		29.7	58.4	
9.3		39.5	17.1	
9.6		40.2	36.3	
9.5		41.3	38.0	
9.0		42.1	41.5	
8.2	32	1.6	7.6	K
9.0		2.7	1.1	
9.0		21.9	55.3	M
10		22.0	50.6	
10		22.8	27.6	
10		36.2	36.0	
9.8		41.1	54.4	
10		47.7	54.8	
9.6		58.9	46.3	
9.4	33	1.4	1.5	
9.8		12.2	46.8	
8.7		20.5	49.9	K
9.0		22.9	55.6	K
9.1		24.0	11.2	
9.8		26.5	15.8	
9.5		32.9	23.3	

1601—1660				1661—1720				1721—1780				1781—1840				1841—1900			
	6h	−13°			6h	−13°			6h	−13°			6h—7h	−13°			7h	−13°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.6	33 42.8	38.0		8.4	41 43.2	18.6		10	48 7.9	36.9		9.8	55 12.6	8.1		9.0	1 53.1	27.7	K
9.7	51.9	0.9		9.4	44.3	28.5		8.1	9.1	58.5	K	8.9	18.8	18.9	K	8.5	56.5	46.2	K
9.7	58.0	25.3		9.1	56.6	55.4		9.7	15.9	18.3		9.4	21.7	14.0		9.4	2 17.7	31.6	
8.5	59.8	9.3		9.6	42 3.7	33.2		9.8	17.3	14.8		9.3	32.1	30.3	K	9.4	34.1	5.6	
9.3	34 19.4	13.1		9.8	8.3	59.4		9.4	19.5	27.6		9.3	34.8	37.8		9.8	36.7	53.7	
8.5	33.7	39.6	K	9.6	9.7	27.1		9.5	26.7	25.0		10	40.4	42.3		9.2	38.9	42.1	
9.9	34.3	30.9		9.6	13.5	21.7		9.4	32.2	9.5		9.1	48.1	59.9		10	51.6	52.2	
9.0	37.5	50.5		8.9	21.2	58.2		10	42.0	28.4		9.3	55.0	31.8		9.8	3 5.7	45.5	
8.0	51.0	48.3	Sj	8.6	42.1	32.5		8.9	44.3	20.2		9.1	59.6	29.0	K	9.5	7.8	20.9	
9.8	35 0.1	17.6		9.0	43.8	14.0		9.8	45.4	13.5		10	56 4.4	57.6		9.1	12.6	54.8	
10	8.0	29.1		9.5	55.5	31.7		9.8	45.5	48.3		8.0	13.5	1.0	K	7.0	17.9	23.7	
9.8	14.8	41.3		9.0	43 1.9	48.5		9.3	58.0	47.9		9.5	17.3	18.0		8.8	22.0	21.5	
9.3	21.2	38.7		10	4.2	31.8		10	49 1.4	46.3		9.2	23.4	12.4		9.2	28.8	22.4	
9.2	26.9	20.8		9.0	4.3	52.2		10	7.6	13.9		9.2	25.0	16.4		9.8	30.0	17.8	
9.7	39.2	9.0		10	8.6	18.9		8.5	9.3	33.9		9.1	25.8	57.5	K	9.3	43.8	19.5	
9.2	42.5	7.3	K	9.8	25.5	19.4		9.6	16.5	58.7		9.7	38.3	59.0		9.8	45.8	58.2	
9.4	43.8	14.2		8.3	26.4	27.2	Sj	9.7	17.7	13.0		9.8	45.2	31.8		9.0	56.0	49.5	
9.7	45.1	12.0		9.7	27.8	41.5		9.8	22.0	51.6		9.8	48.1	3.6		9.8	59.4	20.6	
9.0	36 9.8	16.2	K	9.8	40.6	46.2		9.5	24.4	1.8		9.8	58.4	41.9		9.5	4 2.9	58.2	
10	11.7	14.6		9.8	41.7	23.1		9.5	26.1	31.5		9.2	57 6.9	45.5		9.5	6.3	29.5	
9.5	17.9	2.4		10	45.2	36.6		5.0	27.6	51.6	L	9.4	9.9	45.7		9.8	6.9	55.0	
7.3	22.6	33.5	K	8.0	48.6	56.9	L	9.8	30.4	59.9		8.3	34.1	31.4		9.4	32.6	41.8	
9.3	36.4	2.3		9.4	56.4	48.7		9.0	50 3.2	35.9	M	9.3	40.0	59.9		9.1	41.7	32.9	
8.8	36.9	43.1	K	9.6	44 17.5	5.1		10	7.8	42.5		9.0	42.2	34.8		9.2	51.1	53.2	
8.3	52.5	2.9		9.1	19.3	41.9		10	11.0	36.8		9.8	43.8	17.8		10	5 3.4	23.3	
8.8	37 2.7	42.6	Sj	8.5	21.2	3.5	K	10	15.7	28.1		8.8	59.9	43.9		9.2	11.3	37.6	
9.8	2.8	56.5		9.0	27.4	43.6	K	9.7	16.5	7.5		9.1	58 17.6	58.0	K	9.5	15.2	38.8	
9.5	11.1	20.2		9.0	27.5	19.1	Sj	9.8	18.4	0.0		8.0	21.5	45.7	K	9.6	29.5	26.6	
10	14.8	56.9		10	45.1	6.8		10	31.8	39.8		8.8	35.1	50.3		9.6	34.9	55.1	
9.9	34.2	32.1		9.6	54.6	33.0		9.3	42.3	10.9		10	46.9	55.6		9.3	36.5	15.1	
9.5	37.5	24.8		9.5	45 0.4	11.7		10	51 19.2	21.6		9.3	47.7	8.4		9.7	40.8	15.4	
9.5	50.9	1.1		10	5.6	45.6		10	29.3	31.2		9.5	59.5	26.3		9.8	44.9	42.5	
10	54.5	48.0		9.1	19.0	3.0	K	9.3	50.8	10.1		9.3	59 5.9	20.2		9.3	47.9	13.0	
9.7	58.3	8.7		8.2	30.9	2.4	K	8.4	57.7	40.1		8.0	8.3	36.5	K	9.7	49.3	55.5	
9.2	38 2.9	11.5		10	31.7	12.6		9.2	52 6.8	40.5		9.1	14.3	3.6		10	51.5	36.0	
8.7	19.5	14.3	K	9.5	34.8	30.7		9.6	8.0	4.4		9.3	19.4	20.7		9.9	58.2	41.3	
9.8	22.9	44.2		10	42.8	41.2		10	14.3	40.7		9.8	21.4	53.5		9.1	59.1	32.3	
9.0	25.8	3.5	Sj	9.5	59.0	28.2		9.2	16.1	52.4		9.3	26.2	15.8		9.8	59.8	18.3	
9.3	28.4	23.4	K	9.5	46 11.7	58.8		10	22.9	2.8		9.0	46.4	42.2	K	9.2	6 1.1	39.0	
9.5	39 3.5	13.0		10	37.5	53.1		9.8	23.2	16.6		9.8	0 0.3	13.2		9.8	12.6	4.8	
8.8	24.8	41.2	M	9.1	38.3	29.7	K	9.7	23.6	51.0		9.3	1.2	54.8		9.4	25.1	10.3	
9.9	35.3	39.1		9.4	47.2	41.2		9.8	26.0	10.2		9.0	2.7	44.0	K	9.8	28.7	35.2	
9.6	59.5	52.5		9.4	48.9	42.1		9.7	45.1	13.9		10	5.5	13.9		9.1	34.8	16.2	K
9.8	59.5	54.2		10	53.2	41.8		8.3	49.0	30.4		9.3	16.5	53.9		10	41.8	39.5	
9.5	40 4.9	0.6		8.9	56.0	31.5	Sj	10	50.9	27.8		9.0	17.2	27.0	K	9.5	46.7	3.3	
9.0	25.9	1.0	M	10	56.6	47.1		10	53.4	8.8		9.2	37.9	23.8		10	58.3	16.2	
8.9	30.9	20.3		9.8	59.4	53.5		9.8	53 0.5	57.9		8.8	44.0	13.7	K	9.4	7 10.5	47.0	
9.4	45.2	54.4		9.5	47 1.8	22.5		9.8	5.4	1.0		8.0	44.2	49.3	L	9.2	13.4	9.1	K
10	46.2	9.1		7.8	6.9	1.2	Sj	8.8	20.0	31.1	K	9.8	53.0	1.8		9.8	20.5	28.9	
9.4	47.0	17.0		8.9	9.7	0.1	M	8.5	33.9	23.5	K	9.2	55.3	38.6		9.7	20.6	19.0	
9.5	50.0	49.4		9.8	10.9	46.2		9.0	41.2	36.9		8.3	56.8	29.4	K	9.5	36.0	25.8	
9.3	52.6	56.7		8.8	11.0	50.8		9.8	54 4.1	14.6		10	57.9	21.1		9.8	38.2	15.1	
9.8	58.0	52.3		9.5	12.0	1.8		9.8	10.6	34.4		9.4	1 9.8	59.3		9.8	42.9	10.7	
10	41 0.0	4.1		9.4	12.7	36.1		9.7	26.2	10.1		10	10.4	55.8		9.5	44.0	3.9	
10	15.8	16.9		10	15.1	6.5		9.8	26.4	0.4		9.4	11.2	37.5		9.1	54.1	53.7	K
9.5	17.1	12.3		9.4	28.0	58.9		9.9	28.7	4.9		9.8	27.7	23.0		9.8	8 1.6	8.0	
7.8	18.7	33.4	Sj	8.7	29.6	34.1	K	8.8	52.1	14.7	K	10	31.3	39.7		9.9	2.4	12.7	
9.4	27.8	15.6		8.2	31.2	27.3	K	9.4	52.2	0.5		9.1	32.9	2.5		9.8	35.4	55.1	
9.9	37.4	11.8		8.2	51.8	34.4	K	9.5	55 3.5	25.6		9.5	34.2	0.3		9.1	37.5	9.3	
8.3	41.1	16.5	Sj	9.3	52.1	12.9		9.6	8.6	28.7		9.5	38.8	39.0		9.8	41.6	28.7	

1901—1960				1961—2020				2021—2080				2081—2140				2141—2200			
	7h	−13°			7h	−13°			7h	−13°			7h	−13°			7h	−13	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.7	8 44.7	33.0		9.3	14 26.3	7.0		10	20 45.2	53.6		9.8	26 3.7	35.2		9.4	31 20.0	24.	
8.7	50.2	19.1		9.2	30.1	21.5		9.4	45.7	43.3		9.3	6.8	13.3		9.8	20.9	22.	
10	9 4.3	14.2		8.8	33.9	47.7		9.4	46.1	37.3		9.3	7.6	42.9		8.3	34.1	31.	
8.5	8.6	2.4		9.5	37.6	28.1		8.6	52.8	20.0	K	8.3	25.5	6.5	L	9.4	39.6	56.	
8.0	21.9	41.3	L	9.8	42.7	20.8		10	56.1	20.1		9.1	32.4	22.2		9.5	40.5	9.	
8.3	25.4	51.6		9.7	53.6	28.6		9.8	21 5.6	13.9		9.4	36.8	59.8		8.2	32 18.4	22.	
10	25.6	8.7		9.2	54.2	12.1	K	9.4	19.5	44.0		9.8	43.7	30.3		9.4	19.4	23.	
8.9	30.5	28.4		9.9	15 0.6	44.3		9.8	27.4	33.0		9.5	45.9	32.9		10	21.0	4.	
10	40.3	10.2		9.2	7.4	36.0		9.2	33.1	24.1	K	10	47.1	44.1		9.5	26.0	48.	
9.3	51.7	31.1		9.1	22.5	5.1		10	36.2	47.3		9.8	51.3	36.1		9.8	28.7	24.	
10	53.0	3.5		10	25.2	2.5		10	36.4	43.9		9.6	52.5	57.6		9.3	32.9	43.	
10	58.9	45.0		9.1	50.9	55.9		10	37.6	33.0		9.5	53.5	28.1		9.1	37.0	7.	
7.5	10 0.2	11.7		9.8	51.3	33.5		9.4	22 0.1	19.3		9.6	54.2	19.3		10	45.3	20.	
7.3	6.4	25.5		9.7	16 5.7	11.6		9.0	0.5	24.3	K	9.5	56.2	17.2		9.5	49.9	2.	
9.8	7.4	32.0		9.5	10.9	37.5		8.9	2.7	30.8	K	10	27 1.6	26.8		9.1	52.5	49.	
8.0	16.6	51.4		9.0	20.5	41.8		9.5	3.6	35.6		9.0	7.9	43.4		9.5	53.1	41.	
9.8	23.9	21.8		9.0	33.1	24.6		9.4	12.0	53.8		8.7	10.0	22.8		8.5	53.4	33.	
9.1	24.1	41.3		10	39.4	56.7		9.5	17.5	12.2		9.1	17.1	8.6		9.3	33 0.3	55.	
7.8	26.7	43.9	L	8.0	41.3	4.7		9.8	18.9	57.0		9.8	39.0	48.4		9.8	0.7	49.	
8.8	45.3	39.6		9.0	45.9	1.6		9.0	25.7	28.5	K	9.8	39.2	19.4		8.9	9.5	53.	
10	47.8	16.2		7.8	57.6	49.1	L	10	29.6	4.0		7.2	47.6	33.3	L	9.9	11.3	21.	
9.7	11 12.6	19.8		9.8	58.2	33.0		9.5	37.5	46.2		9.3	58.1	38.2		9.5	56.4	48.	
9.0	15.0	26.6		9.3	17 0.1	10.5		9.8	38.4	42.9		9.4	28 4.3	39.1		9.4	34 1.5	54.	
7.7	16.7	38.0	L	9.2	2.9	38.7		8.7	48.6	10.7	K	8.2	12.0	51.2	L	9.2	13.9	21.	
8.3	22.4	26.6		9.9	8.4	36.4		9.6	59.6	7.6		9.8	17.7	12.3		9.4	24.7	4.	
8.3	22.6	26.2	S	9.8	18.6	24.5		10	23 4.1	4.5		9.6	17.8	20.3		9.5	40.5	9.	
9.3	22.8	57.8		10	31.2	31.0		9.5	6.2	28.4		9.4	23.4	44.0		9.7	44.7	39.	
9.4	25.4	25.5		9.3	36.8	13.5		9.7	6.9	37.8		9.4	37.3	29.8		10	50.5	19.	
9.6	29.9	52.3		9.5	37.5	22.3		9.3	10.3	40.1		8.0	40.6	43.9	L	9.0	57.9	26.	
9.7	40.6	24.0		8.8	43.6	55.8	K	9.4	10.7	13.2		9.7	49.4	5.6		9.0	35 2.6	3.	
10	42.6	43.4		10	44.8	6.2		7.0	13.4	41.3	✓	8.6	54.1	30.6	L	10	5.5	32.	
10	43.8	46.7		9.0	56.0	42.4	K	9.0	13.4	50.5		9.4	29 22.3	17.9		9.5	8.2	16.	
10	51.0	1.3		9.8	18 0.3	33.0		9.0	16.3	37.2		9.0	28.9	13.6		8.9	8.5	24.	
9.5	12 1.2	59.8		9.7	9.5	13.1		10	32.2	37.3		9.8	30.4	30.8		9.5	14.3	44.	
9.0	3.9	59.1		9.8	10.9	36.0		9.3	32.3	20.2	K	9.3	34.4	0.0		9.8	14.7	2.	
9.3	13.7	10.1		9.0	11.0	50.8	K	9.5	36.7	38.7		9.6	37.1	52.8		9.1	21.7	0.	
9.8	13.8	29.0		9.5	18.7	31.9		10	39.4	37.9		10	43.9	21.4		9.0	32.9	48.	
9.2	18.4	22.5		9.5	18.8	45.0		8.6	54.6	7.8	K	9.6	46.7	54.9		10	38.7	14.	
9.0	19.1	11.7	K	9.4	22.6	20.7		9.8	56.4	45.9		9.0	51.8	55.6		9.1	43.9	36.	
9.8	25.0	37.3		9.5	23.5	5.3		9.7	59.0	15.1		9.0	52.9	44.1		8.0	44.0	30.	
8.8	29.0	21.9	K	6.5	28.6	27.9	Sj	9.9	24 10.7	31.9		9.3	54.2	48.9		9.6	46.0	29.	
9.4	35.7	35.6		9.6	35.0	2.9		9.6	11.1	7.0		9.8	54.5	56.3		8.8	55.7	57.	
10	45.6	50.0		8.9	36.2	48.4	K	9.1	15.2	10.3	K	9.7	30 4.2	31.8		9.0	36 11.5	56.	
9.2	53.5	18.0		9.8	40.3	51.2		9.2	17.1	17.8	K	9.0	6.3	41.0		9.3	17.9	59.	
9.4	55.1	27.7		9.2	45.9	55.5		9.8	25.0	56.6		9.1	8.4	3.2		9.1	18.8	45.	
9.6	13 0.7	11.7		9.1	52.1	10.8		9.5	31.4	9.1		9.5	15.2	35.4		9.4	19.2	7.	
9.3	9.5	28.4		8.5	19 14.8	31.1		9.8	34.7	11.7		9.0	25.1	33.2	Sj	9.3	28.7	49.	
8.8	10.9	30.4	K	7.2	15.8	53.4	K	8.9	42.0	20.8	K	9.3	25.6	29.2		9.3	29.8	45.	
9.7	16.2	56.3		9.0	23.2	50.5	K	9.2	49.8	35.4	K	9.7	26.1	6.5		8.9	32.6	39.	
9.6	22.7	48.0		10	37.2	57.8		9.8	59.3	7.5		10	27.0	35.4		9.3	42.3	42.	
8.2	28.9	44.1		9.8	37.3	9.3		9.5	25 0.0	46.8		10	30.3	36.6		9.5	44.7	42.	
9.3	39.5	5.9		9.2	49.8	52.5	K	9.4	3.6	31.8	K	10	33.3	2.4		9.6	49.1	44.	
8.5	41.8	16.4	Sj	9.9	52.4	31.5		9.2	5.0	26.2	K	9.8	44.5	29.9		9.2	56.2	39.	
9.7	43.9	13.1		9.1	20 2.7	21.5	K	10	5.8	2.7		9.2	54.8	18.9		9.0	37 3.4	51.	
10	51.2	12.1		9.7	4.5	12.8		9.8	14.3	56.4		7.9	31 1.0	6.4	K	9.2	16.5	32.	
9.1	55.9	22.5		9.2	4.9	20.9	K	9.0	30.3	49.7		9.5	5.9	46.8		9.5	18.0	14.	
10	14 1.3	11.1		9.6	7.8	32.8		10	37.2	36.5		9.8	9.0	59.9		8.4	36.6	18.	
9.5	15.0	26.7		9.5	24.2	5.7		10	43.7	18.2		9.4	13.1	29.8		10	44.0	28.	
10	15.5	49.5		9.8	24.9	48.5		9.0	59.5	24.0	K	9.5	17.9	24.2		9.5	49.5	47.	
9.4	24.2	15.2		10	31.2	26.1		9.6	26 1.5	42.3		9.8	18.3	6.8		10	54.3	4.	

2201—2260					2261—2320					2321—2380					2381—2440					2441—2500				
	7h		−13°			7h		−13°			7h		−13°			7h—8h		−13°			8h		−13°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
10	37	55.9	6.4		10	44	38.4	6.5		9.3	51	13.5	39.0		7.5	58	46.3	10.0	L	9.5	7	15.1	23.6	
9.0	38	1.8	47.0		9.6		40.7	14.1		9.4		19.7	58.7		8.5	59	4.8	42.3	K	9.4		35.4	45.7	
9.8		8.6	45.8		9.8		51.9	29.2		9.7		28.0	19.7		9.8		11.6	49.2		8.5		37.5	0.9	K
8.1		12.2	20.9	K	9.5		54.4	51.5		9.7		29.8	5.3		8.7		12.8	33.0	K	9.8		59.8	59.4	
9.8		23.7	39.2		9.3		56.8	3.7		9.8		38.3	5.6		9.0		41.4	12.5		9.8	8	0.1	51.4	
10		33.6	11.5		9.3	45	0.2	42.3		9.8		55.3	2.0		9.8		45.6	40.0		9.0		2.4	35.3	Sj
8.8		40.4	59.6		5.7		3.4	30.9	Sj	9.8	52	9.7	1.9		9.0		48.4	15.1		9.0		15.5	47.5	
10		49.6	15.7		10		21.9	31.7		8.0		19.3	30.0	K	10	0	1.5	43.2		9.8		15.7	0.4	
9.4		53.0	29.0		10		33.9	53.2		9.1		21.4	10.5		9.5		7.2	8.1		9.5		17.9	18.8	
10		53.5	5.7		7.2		43.9	29.4	K	9.9		23.5	34.6		9.1		7.7	17.2		9.0		27.8	48.7	
9.6	39	2.6	14.8		9.8		53.4	52.7		9.1		26.6	42.0		8.5		12.2	53.1	K	9.9		39.0	21.8	
9.0		6.9	11.0		10		54.3	15.7		9.2		27.9	35.4	K	7.5		20.3	54.6	K	7.0		46.9	11.0	Sj
9.8		10.1	38.5		10	46	3.1	15.2		9.1		38.9	35.2	K	10		25.9	50.8		9.6		59.7	58.6	
10		10.8	35.6		8.5		5.9	31.1	K	9.8		40.3	53.2		10		35.1	50.6		9.8	9	3.4	13.1	
9.5		14.5	54.8		9.3		7.4	18.8		10		45.8	27.4		9.5		36.4	26.7		9.8		14.2	16.9	
9.5		16.2	4.6		9.8		12.4	32.4		9.4	53	3.5	36.8		9.4		40.1	56.1		9.4		15.6	42.4	
9.0		32.4	5.6		8.2		16.7	40.9	K	8.5		4.0	27.4	K	10		41.3	14.9		9.0		28.1	22.6	
10		41.9	48.1		9.4		32.8	51.0		8.9		31.3	26.8	K	9.1		43.5	19.8		10		42.3	0.9	
9.5		45.4	24.4		10		35.9	7.5		8.9		32.5	8.2		9.4		56.2	28.4		9.5		43.0	9.1	
10		46.5	8.3		10		42.8	3.0		10		44.7	24.5		9.5	1	13.8	19.0		9.3		43.5	29.3	
9.4		54.9	48.2		9.4		57.7	26.0		9.0		45.8	30.7	K	7.6		16.4	5.3	Sj	10		52.9	9.4	
9.5	40	0.7	40.5		9.2		58.5	26.4		9.0	54	11.8	9.9		9.5		18.6	38.9		9.4		56.2	37.8	
9.3		5.8	42.7		9.4		59.0	22.6		8.7		12.1	22.6	K	10		19.4	59.4		9.5		57.8	54.3	
9.3		13.7	41.6		8.3	47	0.1	14.0		9.0		17.8	56.6		9.1		24.7	38.6		10	10	1.3	11.5	
9.8		17.4	49.2		9.0		2.2	1.6		7.5		18.4	44.4	K	9.7		36.0	16.4		9.2		6.4	19.3	
10		22.9	58.3		9.3		7.2	43.8		9.0		34.1	43.5	K	9.4		54.3	17.1		9.1		19.6	57.8	
10		25.5	32.4		10		16.1	7.2		9.3		46.1	22.8		10		57.6	48.9		9.5		25.8	26.6	
9.5		27.9	51.0		10		17.9	11.0		9.8		59.6	47.4		9.3	2	20.8	54.9		9.4		26.8	33.7	
9.4		38.8	29.5		9.8		22.0	23.6		9.3	55	4.5	18.2		9.1		25.8	34.1		9.5		39.4	3.2	
10		41.0	8.9		9.7		37.3	59.0		9.5		17.6	19.3		9.0		33.8	37.1		9.5	11	7.2	49.6	
9.7		56.5	21.1		9.8		38.7	21.9		9.5		26.7	14.4		9.4		35.1	30.0		8.8		26.7	47.0	
9.3	41	4.0	16.8		9.9		43.9	59.6		9.5		27.5	44.2		9.4		37.8	30.2		9.3		58.5	25.8	
9.3		10.4	30.7		9.5		45.8	7.4		10		39.7	15.0		9.0	3	1.5	19.7		9.4	12	0.6	57.4	
9.4		18.2	45.2		9.0		51.7	3.3		9.0		44.1	11.2	K	9.8		3.1	39.2		9.4		22.3	40.1	
10		29.9	6.7		9.5		54.1	52.3		9.8		44.3	34.9		9.8		6.6	58.9		8.6		25.6	9.8	K
8.0		32.7	44.2	L	9.0		55.3	32.0		10		59.1	46.6		9.7		25.9	57.2		9.2		25.8	13.8	
9.8		39.6	38.2		10	48	1.9	44.9		9.8	56	3.5	53.8		9.5		36.4	0.3		9.1		29.1	30.8	
9.0		40.0	8.5		9.5		3.1	54.8		9.8		11.3	20.8		9.2		44.0	4.3	K	10		38.4	9.0	
9.5		45.8	1.8		9.8		4.2	21.1		9.2		24.2	13.3		9.8		51.3	40.8		9.3		39.9	21.6	
10	42	2.4	8.3		10		15.7	22.8		8.8		26.1	14.5	K	6.2		56.0	22.2	Sj	9.5		55.0	5.4	
10		9.7	55.0		9.1		17.2	46.0		9.7		29.1	12.0		8.9	4	18.9	55.0		9.5		59.1	58.6	
9.1		25.9	22.5		9.3		32.6	20.5		9.7		29.4	18.5		9.5		23.0	13.5		9.5		59.8	13.3	
9.4		34.8	10.1		9.2		43.5	11.7		9.4		44.3	11.3		9.6		23.8	6.1		9.6	13	24.3	48.5	
9.1		41.8	26.7		7.8		57.1	21.2	L	10		47.9	36.6		9.8		27.4	32.3		9.1		34.0	28.7	K
9.3		43.0	16.1		8.6	49	6.9	16.9	L	9.2		49.7	19.9		9.2		28.7	56.3		9.5		35.5	53.1	
9.5		49.2	22.5		9.8		7.8	41.8		9.5	57	1.2	59.0		8.0		36.7	56.3	K	9.5		43.5	21.7	
7.2		57.9	43.2	K	9.5		9.0	34.9		9.4		34.1	32.0		10	5	2.9	40.6		10		43.9	54.2	
9.4		58.6	15.6		9.8		21.7	31.2		9.5		37.6	6.2		9.4		7.3	13.7		8.2		47.7	10.8	K
8.8	43	5.9	31.5		9.4		31.8	28.0		9.3		40.1	59.7		8.4		15.1	44.5		10		55.1	54.4	
8.8		8.4	23.8	K	9.4		51.2	24.3		9.5		49.5	42.7		9.3		18.9	35.8		10	14	0.0	21.2	
9.0		17.1	10.3	K	9.8		58.9	39.3		10		50.6	40.7		9.8		37.9	57.8		7.5		1.5	54.6	K
9.5		18.6	38.6		10		59.8	32.6		10		55.6	38.3		9.6		50.6	47.9		9.0		5.1	33.6	
10		27.0	11.8		9.6	50	6.9	11.4		9.2		56.1	57.9		8.0		56.0	2.3	K	9.8		8.4	14.5	
9.0		38.3	13.8	K	9.8		15.3	50.9		9.5	58	6.0	52.5		9.5		58.2	50.4		9.3		14.6	14.4	
9.0		54.5	24.0	K	8.4		23.4	0.6	K	8.0		7.7	31.8	K	9.5	6	5.9	24.9		9.1		25.5	6.5	
10		55.3	59.4		9.2		24.4	35.2	K	9.3		8.0	5.0		9.4		7.5	10.6		9.5		26.2	7.7	
10		58.8	0.2		9.4		25.2	0.8		9.2		8.8	37.4		8.2		11.4	25.3	K	9.3		29.1	7.8	
9.1	44	13.8	48.2		10		38.1	0.5		9.3		16.2	53.0		8.2		12.9	4.1	K	8.8		30.5	43.3	
10		22.3	6.4		8.8		56.3	55.9		9.4		17.1	6.5		9.1		24.6	28.3		9.3		36.0	56.0	
9.5		25.2	0.2		9.1	51	12.7	8.8		8.5		39.7	52.4	K	9.8		58.4	43.6		9.0		59.6	58.7	

2501—2560				2561—2620				2621—2680				2681—2740				2741—2800			
	8h	—13°			8h	—13°			8h	—13°			8h	—13°			8h—9h	—13°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.3	15 2.9	58.7	K	9.4	22 53.9	33.5		9.7	30 57.6	3.4		10	40 43.8	7.9		9.8	54 2.9	11.5	
8.0	13.9	18.6	Sj	9.3	23 13.9	40.0		9.5	31 20.0	54.5		9.8	48.5	47.5		10	19.6	43.8	
9.4	18.1	28.8		9.5	14.6	12.7		8.8	20.1	25.5		9.5	54.9	39.9		8.2	42.5	55.6	L
9.2	25.6	29.5		9.8	34.4	59.0		9.7	29.2	56.0		9.0	41 13.1	26.0	K	9.1	48.3	51.5	M
9.1	25.7	5.8		9.8	53.7	29.9		9.5	51.9	14.7		9.5	16.4	45.2		9.4	55 30.2	19.9	
8.9	27.1	9.8	Sj	7.8	24 16.4	31.5	K	9.8	32 6.2	10.0		8.6	48.3	8.1	K	7.7	56 15.8	26.0	K
8.8	34.5	26.6		9.4	22.4	59.3		9.5	7.7	17.3		10	48.5	14.2		9.8	17.0	10.1	
9.4	34.9	7.8		9.8	35.7	10.1		8.5	19.6	2.6		9.5	42 5.2	56.7		9.3	22.2	48.7	
10	57.7	45.1		9.4	41.2	7.6		9.8	24.1	29.7		9.9	20.0	28.0		9.8	22.5	10.7	
9.7	57.7	8.5		10	45.1	49.3		10	30.7	17.3		9.0	25.1	3.8	K	9.4	41.9	55.7	
9.3	16 8.0	50.2		10	46.3	35.0		9.5	40.7	32.1		10	37.8	37.3		7.9	45.3	51.8	K
9.5	32.9	48.0		9.0	50.0	51.4		9.4	46.1	22.2		8.3	50.2	29.8	K	9.8	57 16.2	21.9	
8.5	40.4	7.0		9.5	59.8	6.2		8.2	49.1	58.9	K	9.7	54.9	10.6		8.7	21.1	42.8	K
9.0	53.5	59.1		9.5	25 14.2	3.3		9.6	55.8	58.2		8.8	43 47.6	47.0	K	9.8	29.9	0.8	
9.4	17 5.2	10.2		9.3	22.4	37.1		9.4	33 9.7	0.1		8.5	44 4.7	8.5	K	9.9	47.8	25.0	
8.1	6.3	9.9	K	9.6	24.3	35.0		9.1	13.3	54.7		7.3	17.1	11.6	K	9.8	52.2	6.6	
9.1	22.5	34.6		9.2	29.0	15.0		9.4	19.4	4.1		9.9	20.6	31.3		9.0	54.0	8.4	
9.4	27.0	35.2		9.4	33.8	9.6		8.2	21.5	21.4		10	45 12.1	11.5		10	58 15.7	36.0	
9.6	31.0	35.6		9.8	34.0	21.6		9.5	23.3	18.2		9.8	34.3	40.9		9.0	25.6	44.8	
9.4	32.8	13.0		9.7	36.5	12.6		8.0	25.0	3.2	K	9.2	40.9	47.4		9.4	44.4	6.4	
10	43.1	14.6		9.4	40.2	5.0		9.7	36.1	55.5		9.2	53.4	45.0		9.7	59 10.5	11.3	
9.8	45.6	48.2		8.8	44.2	27.4	K	9.2	45.0	0.1		9.9	54.5	52.8		10	17.6	46.5	
9.4	46.4	28.3		7.0	51.3	55.8	Sj	9.8	34 7.5	54.5		9.4	46 14.0	51.8		9.1	17.9	57.8	
9.1	47.0	22.5	K	10	55.1	14.5		8.0	14.4	46.9	K	8.4	53.8	17.5		10	34.8	30.7	
9.0	59.6	36.5		8.6	26 4.7	12.9	K	9.6	15.0	42.0		10	47 43.1	8.0		9.6	43.3	19.6	
9.3	18 34.4	10.4		9.3	9.4	43.2		9.7	41.4	46.9		9.1	44.5	57.9		9.8	48.4	18.9	
9.3	36.5	3.0		9.9	19.7	15.6		9.5	42.6	41.9		9.7	51.7	8.8		9.8	0 8.9	4.5	
9.2	43.8	5.0		9.9	22.4	16.7		8.9	45.2	14.5	K	9.2	48 6.6	25.5		9.4	37.8	34.4	
9.4	45.2	47.3		8.5	26.2	7.9	K	8.8	35 0.4	17.9	K	9.8	9.8	43.6		8.9	47.6	51.7	K
10	53.9	54.0		9.4	26.9	36.4		9.8	0.7	33.7		9.4	16.3	30.5		8.5	1 33.3	34.1	
9.5	55.8	5.2		9.5	35.6	3.5		8.9	7.0	24.3	K	9.2	30.4	53.7		9.2	58.1	46.8	
9.5	19 9.1	45.0		9.1	40.2	28.0		9.2	15.9	18.8		9.5	37.7	36.1		9.5	2 6.8	12.5	
8.6	12.4	12.4	Sj	8.8	27 0.6	54.3	L	8.4	21.5	1.0		8.0	38.6	51.1		7.9	9.4	36.0	
10	17.3	4.1		9.4	4.9	55.3		9.8	35.1	32.2		8.3	53.0	29.4	L	8.8	31.9	36.9	
9.5	26.6	58.0	•	9.0	5.0	33.4		9.2	35.3	44.1		9.0	49 3.1	5.2		7.6	47.9	16.3	L
10	33.5	15.2		8.7	12.3	12.5		9.7	44.6	25.0		9.5	8.3	47.9		9.5	50.5	3.7	
9.4	35.0	31.3		9.5	23.3	15.4		9.4	36 17.0	54.4		8.9	21.2	55.6		9.4	3 42.1	12.4	
9.5	35.7	40.9		8.9	26.8	11.3		9.4	18.9	50.1		8.2	21.2	21.1	K	9.5	4 9.7	59.2	
9.4	37.4	47.8		9.6	38.4	22.7		9.6	40.0	36.6		9.1	37.9	22.9	B	9.6	37.7	30.0	
9.2	49.9	38.3		8.8	28 5.3	57.3		9.8	43.7	8.2		9.0	46.7	10.1		9.4	55.5	50.7	
9.2	53.3	25.1		9.4	7.2	9.0		7.7	44.1	31.2	K	9.0	50 1.1	8.3	WC	9.0	5 10.7	29.5	
8.9	59.8	35.4		9.8	12.8	35.6		9.6	48.1	56.8		9.5	27.4	53.0		8.6	26.2	15.9	K
9.8	20 11.4	14.8		9.7	19.4	15.8		9.6	37 7.3	19.5		9.7	56.3	54.6		9.4	33.8	40.5	
9.5	25.5	30.7		9.1	21.7	9.9		9.5	27.7	55.5		9.3	51 4.5	2.0		10	36.3	36.6	
9.1	26.2	33.8		9.5	44.5	17.5		9.3	52.2	57.0		10	19.9	23.4		10	48.0	1.3	
10	29.4	28.5		9.2	29 14.3	53.0	K	9.3	38 1.0	4.7		9.8	25.2	1.1		9.3	6 2.3	38.7	
9.1	44.7	17.1		9.6	27.1	26.0		9.2	34.4	13.7		9.8	25.3	5.6		9.6	14.4	43.4	
9.0	46.8	21.8		9.2	36.2	15.5		8.5	34.6	35.3	K	9.0	32.2	48.4	K	8.8	38.4	42.4	M
7.7	59.8	6.7	K	9.0	38.9	19.5	K	9.3	39 11.2	9.1		10	50.8	19.1		9.4	46.3	56.0	
9.7	21 1.0	44.6		9.6	44.5	47.2		8.2	19.8	50.6	K	9.1	58.5	33.7		9.4	50.8	13.5	
9.4	1.7	20.0		9.3	53.0	7.6		9.2	27.3	9.7		9.3	52 17.1	37.4		9.8	7 17.6	27.5	
8.0	36.0	4.7	Sj	9.7	30 2.1	19.7		9.8	31.6	41.9		9.9	40.3	21.6		10	32.0	1.1	
9.7	43.5	44.1		8.2	9.6	30.1		4.8	32.2	1.2	K	8.9	42.0	14.2	K	9.8	8 12.9	41.6	
9.8	46.3	7.7		9.0	9.7	9.2		9.8	46.9	25.5		9.5	53.6	36.3		8.6	32.7	31.1	
9.5	49.4	33.9		9.0	14.2	33.1		9.6	40 8.5	19.5		8.5	53 11.2	58.0	K	8.4	44.6	21.5	
9.7	55.3	5.4		9.5	33.6	55.0		8.5	9.4	35.8	K	9.3	12.3	50.3	K	9.7	9 0.5	35.1	
9.1	22 1.2	54.1		9.0	46.3	20.4		9.5	20.3	34.7		8.7	13.6	44.4	K	9.8	0.9	0.4	
9.3	4.1	43.0		9.8	47.3	45.3		9.5	20.7	33.4		9.8	19.0	29.7		9.4	2.1	47.4	
9.8	35.3	6.7		9.0	49.9	3.1		9.8	22.4	38.2		10	30.8	58.4		9.8	2.6	28.0	
9.8	46.3	29.3		9.1	55.8	17.2		9.5	41.2	29.8		9.3	57.7	16.4		9.4	3.2	1.2	

2801—2860

m	9h m	s	−13° ′	
9.4	9	9.0	25.8	
9.4		15.9	48.5	
9.7		32.6	32.8	
7.1		33.6	14.1	K
8.8		52.1	15.5	K
9.8		53.7	31.3	
8.9	10	5.4	50.2	K
6.6		14.5	58.3	K
8.7		40.0	50.0	K
9.1		47.3	9.1	
9.8		56.2	0.8	
9.5	11	20.5	49.7	
10		31.6	59.1	
10		45.4	28.7	
9.4	12	15.8	15.1	
9.4		25.9	2.7	
9.4		27.1	25.6	
9.9		39.2	37.9	
9.8		48.1	28.0	
10	13	9.4	5.0	
10		15.0	10.0	
9.6		22.6	57.4	
10		35.3	10.8	
10		37.8	39.6	
9.0		49.8	7.2	K
8.0		51.9	12.2	K
9.9	14	14.3	7.3	
9.3		16.2	8.2	
9.1		27.5	14.9	K
10		28.7	38.3	
10	15	3.4	51.7	
10		3.9	34.3	
9.5		41.1	47.0	
9.2		47.5	56.2	
8.3		58.5	12.4	K
10	16	8.6	38.5	
9.9		17.2	44.3	
9.3		59.9	12.8	
9.4	17	11.5	22.4	
9.3		39.2	16.5	
10		44.2	10.4	
9.8		49.8	52.0	
9.8	18	5.7	46.9	
9.1		8.8	57.2	
9.3		10.8	46.2	
9.2		20.1	18.8	
8.9		22.9	25.4	
9.2		23.0	26.4	
10		34.2	6.1	
10		37.3	52.4	
8.5		53.4	54.7	K
8.8	19	43.8	38.7	
9.5		44.2	43.1	
9.7		45.1	7.6	
7.8		47.8	51.5	K
10	20	0.7	17.8	
9.0		13.7	42.7	
7.8		15.7	16.6	K
9.4		24.4	21.9	
10		42.1	3.0	

2861—2920

m	9h m	s	−13° ′	
10	20	59.3	49.5	
9.5	21	8.8	51.4	
9.4		49.0	55.1	
9.5		59.6	5.2	
9.6	22	9.9	4.3	
7.2		20.1	6.5	K
9.1		45.4	57.3	
9.5		51.3	24.1	
8.8	23	13.9	48.1	K
9.2		46.3	13.0	
9.3	24	50.2	54.6	
9.5		53.0	35.0	
9.0		54.6	5.8	Sj
8.9	25	35.0	14.7	K
9.2		47.3	21.7	
7.0		58.3	22.0	K
10		59.6	32.5	
9.0	26	8.7	50.1	
9.5		10.4	30.4	
9.8		23.5	36.7	
9.8		24.6	10.5	
9.2		40.0	5.2	
10		41.5	3.9	
9.1		47.1	44.5	K
9.8		58.7	59.6	
9.4	27	9.2	14.5	
10		13.6	50.7	
8.5		28.9	13.5	Sj
9.4		43.5	45.6	
10		51.8	41.6	
9.6	28	42.9	4.8	
9.6		57.2	39.0	
9.0	29	17.3	50.4	K
9.5		24.6	54.5	
9.2		34.5	47.1	
9.3		35.3	50.4	
9.5		52.6	53.1	
9.4		53.1	54.7	
10		56.4	37.5	
9.9	30	3.2	23.4	
9.1		7.1	11.0	
9.0		8.4	7.0	K
8.5		10.5	1.4	K
10		21.8	17.0	
9.5		32.8	15.7	
9.6		47.8	35.1	
9.8	31	31.0	59.0	
9.4		31.7	37.8	
8.7		32.1	5.6	K
9.1		34.1	7.5	K
9.5	32	9.0	54.1	
9.7		28.1	11.4	
8.8		38.0	44.3	K
9.1		54.3	2.0	
8.9	33	16.6	25.5	K
10		21.2	29.3	
5.8		21.4	40.6	Sj
9.3		23.2	33.4	
9.4		38.5	49.9	
9.3		42.8	14.4	

2921—2980

m	9h m	s	−13° ′	
9.5	34	4.6	25.6	
9.9		14.3	18.4	
9.1		30.5	18.6	
9.0		50.7	1.5	
10		57.9	12.8	
7.5	35	35.4	19.3	K
8.8		44.6	28.5	Sj
9.7		48.4	12.0	
8.7	36	6.3	14.5	K
8.0		31.0	1.8	K
9.8		40.0	32.0	
9.7		43.3	14.0	
9.4		53.0	31.9	
9.5		55.9	25.5	
8.3	37	8.7	3.5	K
8.6		9.8	22.1	K
10		12.7	44.0	
9.6		22.8	20.1	
8.8		23.3	9.6	K
9.1		45.6	17.4	
10		57.6	11.8	
10		58.5	16.5	
9.8	38	5.7	43.3	
9.4		21.3	16.8	
9.6	39	6.0	28.6	
8.0		17.1	55.5	Sj
9.3		18.5	35.8	
9.2		30.2	52.5	K
8.7	40	6.2	22.1	K
9.4		39.4	48.3	
10		49.5	22.3	
10		53.9	16.3	
9.0		59.2	37.5	K
9.7	42	6.4	10.9	
9.1		42.9	33.4	
9.5	43	10.7	54.5	
9.4		12.1	2.1	
9.5		15.3	28.0	
9.4		17.1	19.5	
9.7		39.5	9.2	
9.2		48.0	39.8	
9.5	44	4.2	11.6	
7.5		15.8	3.0	L
9.4		16.1	53.2	
8.9		18.7	27.3	L
8.8		26.9	7.7	
7.8		49.9	23.9	L
8.8	45	3.6	4.4	K
9.0		21.8	54.5	
9.5		26.8	18.3	
8.7	46	16.3	16.3	K
9.4		33.3	15.1	
9.5		44.1	29.2	
9.5		44.1	18.0	
9.7		45.5	2.4	
9.0	47	0.2	57.7	K
9.0		9.1	31.7	
9.4		23.3	20.7	
9.8		40.1	56.1	
8.9		51.5	57.9	

2981—3040

m	9h—10h m	s	−13° ′	
10	48	7.1	34.2	
9.5		11.9	47.1	
9.3		31.0	2.2	
9.6	49	11.8	43.4	
9.4		21.5	0.3	
9.9		36.9	47.7	
10		39.7	16.2	
8.3		48.3	42.3	M
9.1	50	9.5	15.5	
9.5		14.8	45.6	
9.4		19.9	25.1	
9.0		21.6	39.2	
9.6		32.5	16.9	
9.6	51	0.8	6.2	
9.9		13.3	49.3	
7.4		30.0	15.3	L
9.4		30.5	33.7	
9.5		46.6	5.6	
7.8		51.0	27.4	K
9.1	52	19.7	36.7	
8.0		21.3	2.8	Sj
9.8		30.6	58.2	
9.0		42.8	52.7	
9.3		45.7	39.0	
9.8	53	28.5	30.9	
9.4		47.3	20.4	
9.3		54.5	0.7	
8.5		57.9	27.3	K
8.8	54	0.2	31.3	K
8.8		22.1	15.3	K
9.8		42.4	13.8	
9.8		48.9	33.2	
7.5		57.2	41.6	K
10	55	11.8	55.1	
10		12.2	1.6	
9.7		13.4	49.6	
9.7		14.5	48.0	
9.4	56	6.2	6.5	
9.8		30.8	21.8	
10		43.2	5.8	
9.4		58.4	17.5	
9.3	57	11.7	18.4	
9.4		23.0	40.1	
9.4		34.5	19.7	
10	58	5.3	25.3	
10		21.9	34.1	
9.4		50.5	37.6	
9.7	59	39.0	18.1	
9.8		55.4	29.9	
9.4	0	1.2	22.1	
9.5		12.4	36.4	
10		12.6	4.7	
9.3		13.3	8.7	
9.0		15.5	43.9	K
10		19.9	59.9	
8.6		39.0	27.0	K
8.5		55.5	7.8	K
10	1	2.6	20.3	
9.0		27.6	22.0	
10		27.8	57.7	

3041—3100

m	10h m	s	−13° ′	
9.1	2	4.1	0.4	
10		28.1	25.2	
10		44.0	18.3	
10	3	6.5	53.7	
9.3		8.2	55.6	
9.4		14.6	54.9	
9.9		21.0	51.4	
9.3		35.9	18.0	
8.9		38.0	7.2	
9.2		51.0	53.5	
8.8		51.5	3.4	
9.4		57.6	24.9	
9.0	4	7.9	44.5	
9.9		11.7	30.7	
8.0		31.7	33.9	K
9.9		38.9	6.9	
9.8		56.5	12.1	
9.6	5	22.3	11.3	
9.0		44.1	54.5	
9.5		44.4	6.2	
10	6	34.5	30.6	
9.4		54.7	59.9	
9.8		59.8	14.7	
9.2	7	24.0	34.9	
8.6		38.6	33.5	K
9.0		44.1	14.4	
8.6		56.4	5.0	K
10		56.7	52.3	
9.3	8	30.2	38.7	
9.5		43.4	4.1	
9.0		48.6	33.8	M
9.5	9	20.0	44.9	M
9.0		31.7	40.4	M
10		33.4	3.8	
9.8		58.9	2.1	
8.9	10	2.5	32.2	M
9.6		9.5	43.8	
9.6		9.5	44.5	
10		20.4	59.2	
9.1		21.0	41.0	
10		57.3	23.5	
9.5	11	3.3	5.0	
9.8		30.4	37.5	
9.4		38.3	34.6	
9.3	12	11.3	22.2	
9.8		27.9	44.9	
10		30.4	55.9	
9.8		37.6	11.6	
10		59.0	31.3	
8.9	13	1.4	11.9	
9.2		8.7	8.3	
8.7		16.8	3.6	K
9.8		25.5	35.5	
8.9		26.7	45.3	
8.8		41.7	52.3	K
9.1		44.3	0.0	M
6.5	14	9.4	3.4	K
9.2		28.0	33.1	
9.8		35.5	56.1	
9.5		47.9	35.2	

3101—3160				3161—3220				3221—3280				3281—3340				3341—3400			
	10h		—13°		10h		—13°		10h		—13°		10h—11h		—13°		11h		—13°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.6	14	55.1	44.4	9.1	27	45.4	2.0	9.3	41	44.5	8.0	M	9.8	54	27.0	18.7	9.3	11	9.0	52.0	
9.8	15	23.9	32.0	9.2		53.6	54.6	9.1	42	35.9	26.1		9.3		40.8	43.6	8.8		25.1	11.0	
9.5		58.4	37.5	9.5	28	25.3	8.0	8.7		45.3	15.4	K	9.0		45.6	42.5	K	9.8	25.7	42.3	
9.1	16	24.4	57.8	9.3		32.9	15.1	10	43	10.6	9.0		9.4	55	17.6	52.8		9.8	55.0	27.1	
9.1		43.2	18.9	7.7		36.2	12.1	L	10		29.5	7.4		9.5	56	1.5	30.3		3.8	12	5.0	59.9	K
9.5	17	0.7	22.1	9.5		45.3	45.6		9.7		35.0	18.2		9.8		32.5	15.7		9.4		18.0	26.0	
10		11.4	38.6	9.8		48.3	8.6		9.8		40.5	41.5		10		55.1	10.5		8.7		54.5	58.5	K
8.9		13.6	53.4	K	9.4	29	20.9	11.8	9.5		58.9	33.9		9.1	57	3.3	23.7	K	9.7		55.1	20.8	
9.5		26.9	12.9		9.8		21.2	28.2	9.5	44	4.0	6.5		10		23.6	2.7		9.4		56.6	48.4	
9.5		31.2	24.5		8.6		23.8	5.5	L	8.5		4.5	1.9	M	10		36.7	10.2		7.8		56.9	5.5	K
9.4		57.8	2.1		9.2		30.9	23.6		9.7		19.9	14.4		9.0		54.5	26.4	K	9.8	13	42.4	11.7	
10	18	23.5	21.7		8.5		36.9	19.1	K	9.0		27.0	4.3		10		59.2	59.0		9.5		44.1	41.3	
10		34.1	39.2		10	30	7.0	31.0		9.8		28.6	18.6		9.8	58	14.1	5.9		8.0		51.7	17.1	K
9.9		47.6	6.9		9.9		18.4	55.1		9.8		33.6	11.4		10		29.0	18.8		9.1	14	11.1	54.4	
9.6	19	1.5	10.5		10		33.6	47.9		9.9		46.1	13.6		10		29.1	49.4		10		16.1	46.6	
9.5		8.8	51.1		9.1		50.2	55.7		9.0	45	21.4	2.4	M	9.8		39.4	28.1		9.4	15	2.0	42.3	
10		18.0	7.0		9.5	31	8.3	49.9		9.8		39.6	15.8		9.3		56.5	24.8		9.0		40.7	55.1	
9.5		46.0	8.7		9.5		10.7	46.8		9.9		47.9	6.8		8.7		58.9	21.4	L	9.4		42.2	56.5	
9.0		47.2	23.8		9.8		14.3	48.4		9.1		58.2	32.1	M	9.7	59	19.4	19.6		8.2		51.0	54.0	K
9.5		59.5	29.6		8.7		18.8	21.3	K	9.5	46	2.5	43.0		8.5		22.4	57.5		10	16	15.1	5.6	
9.5	20	6.1	17.7		9.8		58.5	20.4		9.7		10.0	39.5		9.5		23.4	11.3		10		21.6	4.4	
9.5		12.8	40.7		9.0	32	8.6	45.2		9.3		15.4	35.7		9.5		24.5	46.5		10	17	15.4	35.2	
9.7		23.5	27.3		8.8		23.2	22.7	K	9.8		32.9	40.7		9.4		24.5	35.3		9.8		37.9	23.8	
10		44.9	44.1		10		39.2	59.3		9.5		58.8	24.8		8.8		33.3	10.0		9.0	18	24.2	14.5	
10	21	8.3	38.0		9.0	33	12.9	29.0		9.7	47	8.4	39.9		10		46.7	33.5		7.2		25.4	44.4	K
9.6		23.5	40.0		9.5		13.6	55.6		9.2		10.4	8.7		9.9		46.7	24.5		9.8		30.6	14.7	
9.6		32.7	14.0		8.8		36.7	26.6	K	8.6		18.3	14.0	K	10	0	20.0	23.0		9.4	19	8.8	37.7	
9.8		40.4	0.3		7.8		57.0	36.2	K	9.6		18.4	2.0		9.0		37.1	51.0	K	9.7		37.0	7.1	
8.0		41.1	43.4	K	10	34	7.6	48.7		10		44.1	32.2		9.7		39.0	33.3		9.5		56.2	20.4	
8.6		57.0	3.4	M	9.2		29.5	51.2		9.0		44.3	28.1	M	9.6	1	23.9	35.7		9.8		59.4	45.7	
8.8	22	19.2	31.6		9.1		38.5	58.8		9.2		48.5	0.1		9.8		36.8	56.8		9.3	20	18.8	24.0	
9.6		31.3	9.4		9.8		38.8	33.3		10	48	43.3	58.0		10	2	10.0	0.4		9.8		28.7	29.2	
9.1		58.8	39.0		9.1		39.1	57.5		9.8		48.4	35.9		10		19.1	9.1		9.1		44.1	54.7	
9.1	23	1.7	27.4		9.8		49.0	50.0		9.3	49	32.2	27.0		9.2		30.0	49.4		9.5	21	30.8	49.9	
8.7		4.0	52.3	K	9.2		51.7	55.7		9.1	50	7.8	53.3		9.8		53.3	17.4		9.8		34.3	54.6	
10		57.8	44.2		7.0	35	1.8	1.6	K	9.7		12.7	57.8		9.8	3	0.5	44.5		9.8		59.8	18.7	
9.5	24	17.9	48.9		6.2		22.5	13.1	K	10		25.9	8.2		8.6		1.1	31.0	K	8.8	22	1.9	0.4	K
9.0		20.1	50.0		9.2		32.6	52.8		9.8		38.4	46.4		9.6		28.2	37.7		9.4		54.7	52.4	
9.8	25	0.2	23.4		9.8		33.2	43.8		9.7		48.3	33.4		9.8		37.5	49.1		8.7	23	3.3	39.4	K
9.8		0.8	59.5		9.3		47.7	22.8		9.6		53.8	41.0		8.2	4	50.3	20.1	K	9.1		9.7	36.8	
9.4		7.9	46.1		8.5		55.5	59.1	K	10	51	4.4	0.0		7.2	5	34.7	8.3	K	9.4		15.7	52.9	
9.6		18.3	12.9		9.3	36	22.8	15.8		10		18.7	25.8		9.8		37.6	16.7		10		42.8	7.7	
8.4		20.0	38.4	M	10		39.1	51.0		9.9		39.0	1.2		9.3		44.4	3.3		9.1		45.7	42.3	
9.0		35.8	45.8		9.1		43.5	6.6	M	10	52	4.7	14.1		8.7	6	2.2	0.7	K	10		46.6	2.0	
8.8		55.2	16.2	M	9.1		48.0	46.1		8.4		14.6	23.8	K	9.8		27.9	58.6		9.4	24	9.6	20.9	
10	26	1.7	53.9		9.8	37	0.0	33.7		9.0		17.7	43.7		9.5		39.9	1.9		9.9		9.6	1.1	
9.8		2.6	57.4		9.8		1.9	33.3		9.8		24.3	1.8		9.3		46.7	28.8		9.6		17.8	7.3	
10		3.1	48.1		9.5	38	7.2	5.7		9.7		32.7	37.4		9.9	8	24.7	57.5		9.5		42.7	51.4	
9.2		17.0	27.5		9.8		54.6	0.4		9.1		35.0	13.9	K	9.7		27.8	43.2		9.6		50.7	42.3	
10		23.4	6.3		10	39	2.2	2.0		9.8		50.1	30.0		9.2		29.8	9.9	K	9.5		57.1	29.3	
9.5		43.5	26.6		9.1		11.0	16.6		6.5		59.0	18.3	K	9.8		39.3	0.5		10	25	12.3	55.4	
9.7		52.9	59.5		9.4		17.4	28.8		10	53	39.0	19.1		9.4		47.7	42.7		9.0		14.6	23.4	
9.4		53.2	9.8		8.6		35.0	19.0	K	9.7		45.9	31.6		9.3	9	9.8	54.0		9.8		58.2	50.1	
10	27	4.6	21.5		8.1	40	18.0	12.9	K	9.1		47.5	40.8	M	7.8		33.2	43.1	K	9.8	26	3.1	17.3	
9.5		4.7	24.8		9.2		51.8	40.8	M	9.3		47.8	12.5		9.2		39.7	56.4		9.4		4.2	40.0	
8.8		9.6	21.8	K	10	41	0.1	10.8		9.4		57.2	47.5		9.7		45.2	15.0		9.4		24.8	54.3	
9.1		13.3	6.4		9.4		3.3	23.4	M	9.9		59.7	45.3		9.6		47.5	18.3		8.5		43.7	51.2	
9.0		32.8	50.4		9.1		3.4	51.5	K	9.4	54	20.2	34.4		9.8	10	19.1	24.5		9.8		53.2	10.3	
8.8		38.7	57.4	K	9.1		3.6	53.2	K	9.2		20.6	25.6	M	10		30.2	42.6		9.0		56.3	13.4	
9.0		44.5	32.8		9.7		35.7	20.5		10		22.2	35.9		9.8	11	8.3	8.0		8.2	27	8.2	0.6	L

3196: 1:86 1′27″2 B_3, Ep. 1873.22

3401—3460					3461—3520					3521—3580					3581—3640					3641—3700				
	11h		−13°			11h—12h		−13°			12h		−13°			12h		−13°			12h—13h		−13°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
10	27	28.1	37.1		9.9	45	31.7	27.9		9.8	13	23.3	24.1		10	34	54.3	14.0		8.5	54	19.7	2.7	K
9.5		52.4	15.2		9.1		35.6	53.8		9.7		43.3	12.1		9.4	35	19.0	42.0		9.4		35.0	19.8	
9.1		58.0	0.8		8.6		56.5	47.3		9.9		47.0	5.9		9.4		34.5	19.2		9.6	55	11.5	4.2	
9.7	28	2.2	52.9		10	46	6.4	26.9		9.8		50.7	11.4		9.2		41.3	27.5		8.5		16.8	48.2	K
9.1		11.6	52.9	K	9.0		18.8	2.2		9.5		51.5	15.4		9.8		58.6	58.0		9.2		20.2	49.3	K
8.6		18.8	39.5	K	9.1		31.9	34.4		9.2	14	46.9	15.3		7.0	36	0.5	3.6	K	9.4		30.9	25.6	
8.5		23.1	47.2	K	9.8		52.2	13.6		9.3	15	17.8	47.7		9.8		0.7	7.8		9.7		51.3	41.4	
9.8		38.0	30.2		9.3	47	8.4	25.8		7.5		27.0	51.5	K	10		29.2	46.6		9.2	56	32.7	2.9	
9.0	29	8.7	6.2	K	9.8		13.8	12.5		9.2		40.5	59.3	K	9.8		37.5	17.0		9.2	57	2.3	32.7	
9.7		19.5	11.2		9.6		21.7	13.2		9.2	16	22.8	10.3		9.1		45.8	7.4		9.6		50.8	11.5	
9.1	30	22.5	21.2		9.0	48	13.0	31.5		9.1		52.7	38.5		9.4	38	39.4	30.8		6.8	58	13.9	20.2	
8.5		23.3	52.0	K	9.0		15.6	4.4		9.8	17	37.8	47.5		8.3		40.4	23.1		9.3		51.4	59.9	
9.6		57.5	40.9		8.6		17.4	49.1		8.9		59.4	59.5	K	9.5	39	8.6	9.5		9.9	59	1.2	55.7	
9.8	31	9.2	1.8		9.0		43.5	52.0		9.7	19	2.2	36.5		9.5		29.2	5.2		9.1		6.7	13.0	K
9.5		19.0	51.5		8.9		59.6	16.2		9.6		4.1	33.9		9.4		39.7	58.1		9.4		58.8	28.0	
9.7		52.1	15.3		9.1	49	1.0	53.4		9.5		11.8	29.5		9.1		57.0	57.1		7.8	0	1.7	24.9	K
8.9	32	4.0	47.9		9.0		6.5	53.5		9.3		39.8	57.5		9.5	40	14.3	15.1		8.5		24.0	30.9	K
9.6		8.8	25.9		9.5	50	12.9	46.1		9.5	20	2.9	32.7		8.8	41	2.4	37.2	K	9.5		32.7	40.3	
9.5		14.7	16.4		8.5		35.3	18.3	K	9.9		22.2	39.7		9.5	42	4.9	55.4		9.3		42.3	3.6	
6.5		30.4	40.1	K	9.3	53	16.3	49.6		7.0		31.3	38.8	L	9.5		18.6	2.9		10	1	14.7	22.3	
10	33	12.6	7.8		9.7		16.5	12.1		9.4		38.0	14.6		10		23.7	14.8		8.8		42.1	35.8	K
9.6		30.1	10.4		9.5		23.4	52.1		9.3		47.7	0.1		9.4		44.5	58.8		9.4	2	54.9	20.4	
10		35.6	58.2		9.6		43.9	8.0		10	21	13.1	29.8		9.6		49.2	52.8		7.5	3	35.6	28.2	L
9.1	34	25.7	59.6		9.1	54	20.8	40.2	K	9.5	22	10.5	24.8		9.2	43	4.3	52.8		9.5		36.2	4.5	
9.4		26.6	41.0		8.5	56	22.9	5.5	K	9.4	23	2.6	52.7		9.6		15.9	57.0		7.0		43.3	11.3	Sj
9.5		28.9	50.7		8.0	57	36.3	43.1	K	9.2	24	16.8	55.8		9.2		25.1	7.1		9.3		59.1	48.1	
9.4	35	14.4	47.8		9.0	58	24.7	51.0		8.6		21.2	55.2	K	9.1		37.8	52.4		9.5	5	3.0	30.8	
9.5		46.2	30.1		9.4		49.7	45.4		9.4		46.1	34.7		9.5	44	15.8	41.9		9.5		18.8	21.3	
9.4		57.0	5.7		9.4	59	25.8	4.9		9.3		46.8	0.6		8.8		17.7	16.1	K	9.5		59.2	0.7	
8.0	36	13.0	13.0		9.6	1	3.9	17.9		9.6		48.8	28.4		8.7		34.3	14.7	K	9.4	6	14.5	41.9	
10		17.1	0.4		8.8		49.0	3.3	K	9.8		49.9	59.2		9.0	45	7.5	54.3		7.5		31.0	30.7	K
9.8		24.1	5.1		9.5	2	7.1	58.4		6.3	25	6.5	3.4	K	7.8		22.8	49.5	K	10		54.3	59.9	
8.9	37	6.1	18.6	K	9.5		39.0	26.5		9.6		26.6	27.2		9.4	46	2.3	40.8		9.5	7	14.5	41.4	
9.5		7.5	5.4		9.5		46.0	26.5		9.4		27.9	53.0		9.5		15.6	4.0		9.5		37.0	31.4	
9.1	38	3.9	4.8		8.3		58.6	22.0	L	9.5		28.9	31.8		9.7		29.4	59.1		9.4	8	14.3	45.4	
9.7		9.4	3.2		9.6	3	0.5	43.8		9.7		57.1	52.3		9.3		38.7	40.5		9.7		21.9	17.4	
9.8		15.8	59.6		9.1		6.0	33.3		9.1	26	32.4	50.2	K	8.5		39.0	12.0	K	9.5		23.0	46.5	
8.8		16.9	41.0		9.8		57.4	14.3		9.5		43.1	6.3		9.7		56.2	59.3		9.7		25.5	49.6	
9.3		26.7	9.6		9.3	4	1.2	8.4		9.3		52.3	7.5		9.7	47	16.2	19.3		9.9		28.8	58.2	
9.4		31.9	3.9		9.2		36.9	7.8		9.1	27	12.1	26.0		9.6		42.0	12.5		9.5		29.4	53.9	
9.3		39.1	59.0		9.8	5	13.8	7.9		9.5		42.9	51.0		8.8		52.2	18.9	K	9.4	9	2.1	2.4	
9.3	39	28.4	18.0		9.1		29.6	26.3	K	9.8	28	2.8	46.0		9.4	48	57.6	43.1		8.8	10	16.0	18.5	
9.7		33.1	11.7		9.2		39.3	28.3		9.5		34.0	5.5		9.8	49	6.5	12.5		9.1		28.0	0.8	
10		38.5	11.0		9.8	6	22.2	52.4		9.8		37.8	20.0		9.5		24.9	59.9		9.0		29.5	12.6	M
9.8	40	15.0	2.0		10		22.5	26.4		9.9		37.9	14.6		9.8		53.5	15.3		9.2		34.9	48.2	
9.3		40.6	17.4		9.2	7	24.1	17.4		9.4	30	2.2	59.0		10		57.7	45.0		9.2	11	1.2	11.4	
9.3		59.8	9.1		9.4		25.6	29.9		9.7		10.7	57.4		8.7	50	10.3	40.7		9.3		24.7	51.8	
7.0	41	19.2	32.0	K	7.0	8	2.5	15.9	K	10		36.7	1.3		8.2		20.2	33.4	K	8.8		32.4	58.8	K
9.7		21.2	15.0		7.2		22.1	0.8	K	8.2		45.4	15.5	K	9.5		46.4	18.5		9.0	13	44.8	43.3	K
8.9		21.8	1.2	K	9.4		48.0	42.5		10	31	0.8	51.5		9.6	51	13.8	58.5		9.2		59.2	12.6	
9.8		35.9	17.1		9.5	9	1.5	44.8		9.2		6.6	25.6		9.1		35.5	20.9		9.2	14	21.4	6.5	
10	42	30.4	9.5		8.5		8.6	40.7	K	9.5		38.7	28.3		9.4		40.4	32.0		6.5		24.7	39.5	K
9.1		55.1	33.7		9.3	10	43.0	1.6		9.8		42.4	18.1		8.0	52	19.4	24.5	K	9.5		26.2	36.2	
9.8	43	1.7	56.0		7.6	11	7.5	36.0	K	9.3		52.7	59.8		9.4		40.7	27.6		9.4		45.7	40.7	
8.2		38.7	56.1		9.2		8.9	59.4		9.3	32	48.0	13.8		7.3		48.1	6.8	Sj	9.9	15	3.9	10.0	
10	44	16.4	2.8		9.4		14.4	36.0		9.9		57.2	24.7		9.4	53	14.4	45.2		9.2	16	12.2	46.5	
9.8		42.7	12.2		9.4	12	27.5	3.6		6.9	33	2.8	18.0	K	9.5		17.9	42.5		8.9		24.3	7.6	L
7.7	45	5.3	19.5	K	9.4		35.9	7.8		9.6		27.6	58.6		10		19.6	37.1		9.2		30.1	45.2	
9.3		6.2	27.2		9.3		40.6	32.7		9.4	34	8.0	17.2		9.6		43.3	31.1		8.7		39.9	20.7	L
9.4		10.4	55.3		8.2		41.1	18.8	K	9.6		27.9	44.3		9.4		46.4	2.1		9.1		40.4	49.5	

3701—3760

	13h		−13°		
m	m	s	′		
9.5	16	51.0	11.9		
9.5		52.6	1.8		
9.7	17	26.1	16.7		
9.5		42.4	40.2		
9.2	18	3.7	19.8		
9.5		27.6	57.8		
9.3	19	17.5	25.8		
9.8		30.0	38.3		
9.4		45.2	7.2		
9.3	20	1.4	43.2		
9.5		45.1	53.7		
9.6	21	1.3	49.5		
9.8		1.6	24.2		
9.5		5.5	32.2		
9.3		53.7	10.8		
8.7	22	16.0	15.3	K	
8.9		43.0	48.8	K	
9.8	23	9.2	41.1		
9.8		12.9	18.9		
9.0		32.0	29.6		
9.2		36.0	9.8		
9.3	25	0.3	4.1	K	
9.7		0.3	2.1		
9.0		6.6	3.0	K	
9.5		22.8	36.5		
8.9		40.9	30.1	K	
10	26	10.9	16.5		
10		36.0	13.9		
9.3	27	35.1	59.7		
10	28	10.8	5.6		
9.2		28.2	52.7	K	
9.5		29.7	46.0		
9.5	29	43.8	41.1		
8.8		56.4	59.3	L	
9.4		56.8	36.0		
8.8	30	16.3	29.4		
7.8		17.0	51.2	K	
9.1		52.4	1.7		
8.6	31	7.6	50.6	K	
9.5		8.9	57.7		
9.1		11.4	4.0	K	
9.1		11.9	33.5		
9.5		57.7	48.5		
9.8	32	39.6	46.5		
9.5		54.3	14.1		
9.7	33	12.6	47.8		
9.8		24.7	2.2		
9.4		57.7	9.6		
10	34	6.4	33.8		
9.0		6.6	41.1		
10		23.6	52.1		
9.6		27.3	55.9		
9.5		28.4	33.8		
9.5		29.3	41.1		
8.8		31.1	24.8		
8.8	35	39.6	29.9	K	
9.2		50.6	30.3	M	
9.5	36	9.0	36.8		
9.5		39.1	37.4		
9.2		53.5	44.9		

3761—3820

	13h		−13°		
m	m	s	′		
6.8	36	59.1	29.2	K	
9.5	37	11.4	52.3		
8.9		19.2	7.8	K	
9.1		20.3	22.5		
8.2	38	28.1	18.1	B	
9.1		31.5	41.7		
10		41.6	3.9		
9.8		43.4	16.7		
8.5	39	42.3	55.8	K	
8.9	40	4.9	24.2		
10		28.0	3.9		
9.3	41	11.0	49.9		
10		19.5	45.1		
9.0		32.0	18.7	K	
9.3		46.8	37.9		
10	42	21.5	46.4		
10		26.9	3.4		
10	43	4.6	37.0		
9.5		16.8	21.6		
9.5		23.7	24.6		
9.0		43.0	31.3	K	
7.2	44	27.5	57.3	K	
9.0		42.9	33.1		
10	45	6.4	50.1		
10		35.6	10.5		
7.2	46	3.1	56.6		
9.7		15.7	14.1		
9.4		26.5	23.9		
9.1	47	19.2	30.1	K	
9.3		19.4	36.6		
9.2		23.3	14.9		
9.3		24.4	38.9		
8.3		54.6	1.8	K	
9.2	48	40.0	11.1		
8.5		59.8	10.0	K	
9.6	49	6.5	55.7		
10		9.1	12.5		
10	50	0.8	10.5		
9.5		17.6	22.4		
9.3		22.5	19.1		
9.8		36.7	24.0		
6.8		41.4	24.7	K	
9.0		57.4	41.1	M	
9.1	52	15.0	0.9	B	
9.1		35.5	31.5		
9.4	53	34.4	26.7		
9.5		46.9	36.2		
10		47.6	24.7		
9.8	54	3.4	25.0		
9.8		33.3	59.6		
8.7		44.4	39.5	L	
10		53.4	45.4		
9.4	56	0.7	12.7		
9.5		6.9	3.3		
9.8		16.9	3.3		
9.8		39.8	42.0		
10		45.3	14.9		
8.4		49.8	27.9	M	
9.0		53.3	26.8	M	
10		56.4	59.2		

3821—3880

	13h—14h		−13°		
m	m	s	′		
9.4	57	6.2	54.3		
9.1	58	1.8	32.9	K	
9.5		42.1	53.0		
7.0		51.7	30.6	K	
8.6		55.8	24.0	K	
9.8		56.3	36.9		
9.5	59	26.5	1.1		
9.8		55.8	26.0		
8.8	0	19.7	38.9		
9.5		42.2	45.9		
10		45.2	50.9		
9.2	1	4.5	18.3		
8.0	2	29.2	31.6	K	
9.7		39.4	14.3		
9.5	3	9.6	52.4		
9.7		17.8	55.5		
9.6		21.0	1.6		
10		40.8	0.3		
9.8		41.6	44.8		
10	4	13.8	0.8		
9.5		24.7	24.9		
9.6		34.7	58.3		
8.5	5	4.1	29.4	M	
8.6		6.2	3.6	K	
7.0		19.3	10.4	K	
8.5		27.1	8.0	K	
9.6	6	22.5	49.8		
9.3		36.0	58.1		
9.6		37.2	48.8		
9.6		54.1	5.2		
10	7	5.0	51.5		
9.9		10.5	20.3		
9.7		13.1	32.4		
10		45.6	24.7		
9.6		48.1	15.8		
9.4		57.2	22.2		
9.7		58.1	14.9		
9.4	8	0.1	2.4		
9.2		4.3	55.4		
9.9		12.9	52.1		
9.0		23.1	36.2	M	
9.2		23.9	53.6	M	
8.9		53.7	4.0	K	
8.8	9	16.2	20.6	K	
8.5		34.2	17.9	K	
9.5	10	10.4	9.8		
9.2	11	2.1	20.7		
8.0		12.3	51.3	M	
8.0		22.9	44.1	K	
9.1		33.5	0.5		
9.5		35.4	4.6		
10		40.8	50.4		
8.0		41.1	2.7	K	
9.5		49.5	7.2		
10	12	10.1	10.6		
10		17.1	36.0		
9.9		28.9	37.3		
9.8		42.4	7.9		
9.9	13	34.3	51.8		
9.1		39.9	36.4		

3881—3940

	14h		−13°		
m	m	s	′		
9.8	13	43.9	49.8		
9.0	14	4.4	4.8	K	
9.5		46.3	23.9		
9.6	15	24.4	22.7		
10		30.2	20.2		
8.7		45.9	2.8	K	
8.9		57.4	59.2		
9.9	16	7.3	18.0		
9.8		14.2	50.8		
9.6		29.0	51.0		
7.7		44.6	24.8	K	
9.5		45.9	43.6		
9.3		59.3	31.5		
8.6	17	20.7	9.6	K	
8.5		32.6	25.5	K	
9.8		49.7	32.9		
10	18	30.7	33.2		
9.2	19	26.9	19.8		
9.3		44.3	59.6		
9.8		53.2	6.6		
9.3		56.6	45.6		
8.8	20	5.2	43.8	K	
9.9		10.3	33.5		
9.8		36.2	43.8		
10		43.9	0.6		
9.1		50.9	59.8		
9.0	21	3.2	6.8	K	
9.3		28.6	39.6		
8.6		42.3	10.8	K	
10		45.8	27.0		
9.0	22	15.1	37.9	M	
9.0		31.9	57.7	M	
10		37.8	37.8		
10		47.4	34.6		
10	23	13.3	53.7		
9.4		13.6	36.9		
9.8		16.7	43.9		
9.1		32.3	1.4	M	
9.7		47.6	21.2		
10	24	19.0	51.0		
9.2		27.1	31.2	M	
10		48.0	27.0		
8.7	25	39.5	26.3	K	
8.7		41.0	41.4	L	
9.4		43.8	15.7		
9.2	27	5.7	12.3	M	
9.0		6.9	53.5	M	
10		40.1	8.9		
9.8		50.0	37.5		
9.8		55.0	44.0		
8.5	28	24.5	23.3	K	
9.4		47.0	26.4	M	
9.8		59.8	50.5		
9.9	29	37.0	7.9		
10		50.2	0.2		
9.5	30	28.9	33.1		
9.5	31	22.6	3.5		
8.5		44.9	27.3	K	
8.3		45.9	20.9	K	
9.4		58.9	16.9		

3941—400

	14h		−	
m	m	s		
9.5	32	1.9	1	
9.1		20.4	2	
9.3		25.1	4	
7.0		35.9	2	
9.5	33	9.4		
10		20.0		
8.2		24.6	1	
9.5		32.3	2	
9.0		33.0	5	
9.8		38.9	1	
9.5		39.5	3	
9.4		39.8	5	
9.5		48.7	5	
10		50.9	1	
9.9		56.8	2	
9.9		58.0		
8.2	34	7.6	1	
9.9		15.2	5	
9.1		18.9	1	
9.8		35.3	3	
9.5	35	8.2	3	
9.8		27.5	4	
10	36	21.8	5	
9.6		46.2	3	
9.0		50.8	1	
10		52.0	5	
8.9		53.9	4	
9.6	37	11.7	3	
9.6		18.7	3	
9.5		24.3		
9.2		25.1		
9.0		38.3	2	
9.0		58.1	4	
9.1	38	10.4		
9.4		15.8		
9.4		16.7	3	
9.9		37.2	3	
9.4		39.8	1	
10		44.1	5	
9.0	39	15.5	1	
9.8		48.7	3	
9.4	40	11.6	5	
9.5		32.7	2	
9.8	41	9.1	4	
9.8		19.6	4	
6.0		22.3	3	
9.8		26.8	1	
9.4		30.2		
9.4		36.6	5	
9.8		56.8	5	
9.8	42	30.0	1	
9.8	43	2.6	3	
10		12.6		
7.5		18.7		
10		30.5		
9.3		38.6	2	
10		59.0	4	
9.5	44	4.7		
10		13.1	3	
10		18.2	5	

4001—4060				4061—4120				4121—4180				4181—4240				4241—4300			
	14h	—13°			14h—15h	—13°			15h	—13°			15h	—13°			15h	—13°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	44 20.1	25.6	M	10	57 8.2	21.2		9.6	8 42.6	33.1		9.6	22 54.1	56.7		9.4	37 39.6	19.0	
10	27.9	52.8		9.3	19.0	14.7	K	9.8	53.7	59.5		8.6	23 14.6	41.5	K	10	56.3	31.0	
9.0	41.6	23.4	K	9.5	49.8	49.5		9.9	9 8.5	33.1		8.5	29.1	49.2	K	9.6	38 16.5	13.5	
9.5	46.4	46.6		9.8	49.8	23.0		9.8	27.3	16.8		9.3	37.0	48.0		9.3	26.3	15.2	
9.5	45 22.4	59.6		8.7	58 2.1	41.5	K	9.5	28.8	19.8		8.8	46.1	42.9	K	9.4	29.2	32.5	
9.5	38.9	49.4		9.6	45.3	10.7		9.5	43.8	50.6		9.6	24 3.6	7.8		9.8	39 6.8	8.0	
9.8	55.0	30.3		9.5	59 7.5	48.7		9.2	44.7	36.1	M	9.6	36.2	4.8		9.4	8.3	26.0	
9.2	56.9	13.2	K	9.3	19.9	24.6		8.6	11 3.2	47.7	K	9.2	36.4	58.6	K	9.2	32.7	33.5	
9.6	46 0.4	49.2		9.1	24.4	0.6		9.1	54.8	52.1	K	9.4	37.6	53.2		9.6	42.2	55.2	
9.4	37.9	40.1		10	39.5	47.7		9.5	55.7	30.4		9.4	58.5	40.4		9.8	40 14.7	24.3	
9.3	46.6	7.0		9.5	45.6	44.1		9.5	12 9.8	43.7		9.6	25 6.0	42.7		9.6	17.8	51.5	
10	47 21.0	49.3		9.4	0 7.2	17.0		9.1	20.2	26.8	K	9.0	31.9	1.0	M	7.0	21.6	2.5	K
9.9	25.3	49.1		9.7	7.4	6.3		9.6	44.2	38.0		7.3	59.5	44.2	L	9.5	41 13.1	9.4	
9.8	48.1	45.0		10	9.5	3.8		9.0	13 3.7	17.6	Sj	9.5	26 1.7	56.1		9.5	18.1	5.2	
7.8	57.0	18.5	K	10	20.0	48.2		10	30.3	41.8		9.4	4.9	13.1		8.2	18.6	31.3	B
10	58.0	56.0		9.8	27.5	48.2		9.7	43.6	1.8		9.4	5.6	14.4		9.5	31.7	26.0	
9.5	48 13.4	50.8		10	39.7	39.1		9.5	49.1	17.6		9.4	25.0	47.7		9.2	37.2	1.5	Sj
9.7	25.7	56.6		9.7	41.4	16.2		9.8	53.0	19.8		9.5	37.3	38.3		9.7	40.6	1.7	
9.3	29.6	31.1		10	58.2	1.7		8.7	14 21.1	59.3	K	9.7	58.0	38.9		9.4	41.1	11.0	
8.5	40.3	30.7	K	10	58.3	7.8		9.8	22.1	56.5		8.7	27 2.4	11.1	K	8.0	56.2	36.4	K
9.8	42.9	24.2		7.5	1 3.2	26.2	K	9.8	41.8	42.8		9.8	9.5	48.8		9.4	42 17.1	2.4	
8.9	43.4	33.0	K	9.5	3.5	47.8		9.3	47.2	49.8		9.4	27.0	23.1		9.2	21.2	57.5	
9.2	51.8	54.1		9.7	14.5	43.6		9.0	49.1	4.2	K	9.4	30.4	58.3		9.5	51.6	18.1	
8.9	55.9	39.4	K	9.4	31.2	45.9		8.7	50.1	16.2	WC	9.7	42.2	10.8		9.8	52.5	58.8	
9.9	49 26.8	48.0		10	35.6	42.0		8.8	15 13.6	24.3	K	9.5	49.4	8.9		9.7	55.2	32.7	
8.8	36.5	7.0	K	8.9	35.9	0.4	K	9.5	14.9	55.6		9.4	28 13.7	18.6		9.8	58.9	17.6	
10	50 5.6	1.2		9.1	36.3	35.1	K	9.5	15.4	26.6		9.9	24.7	52.1		9.8	43 11.9	14.1	
8.8	18.6	14.4	K	9.3	50.5	49.3		7.5	27.7	49.5	K	8.4	34.2	14.0	M	9.8	23.7	8.8	
10	19.1	1.5		9.1	2 19.0	42.3		10	36.2	47.1		10	29 6.3	7.5		6.5	33.7	41.7	B
9.8	24.4	31.8		9.5	27.9	53.5		9.0	40.1	3.8	K	8.5	9.9	37.7		9.3	44 5.9	17.9	
9.5	40.0	7.7		10	31.3	7.8		8.4	54.0	15.5	Sj	8.4	23.9	10.6	K	9.6	20.6	26.5	
10	54.4	1.1		10	51.3	52.8		7.7	16 2.5	47.2	K	8.5	30 7.4	37.7	P	9.8	32.7	46.8	
9.3	51 34.9	38.0		10	3 12.8	26.0		10	5.8	16.3		9.8	33.4	26.6		9.9	42.1	9.1	
9.8	39.5	2.3		9.4	13.2	36.8		9.4	8.0	4.8		9.9	41.3	28.6		9.3	47.6	10.8	
9.5	44.9	11.4		9.2	19.0	40.4		9.5	17 12.0	32.7		9.6	31 9.9	42.7		10	45 2.6	5.3	
9.5	52 20.0	1.6		10	31.4	47.4		9.8	20.9	34.6		8.2	22.8	25.5	K	9.0	11.6	9.6	
9.3	28.9	33.7		9.4	34.9	42.5		8.8	31.8	26.8	K	9.0	39.3	25.1	K	9.0	15.6	5.5	
10	40.2	51.4		9.2	43.0	3.8	M	8.9	32.6	12.7	K	8.2	44.9	34.9	K	9.5	19.2	46.7	
9.7	47.4	11.0		10	45.7	1.6		9.0	36.5	34.4		8.9	32 6.0	7.5	K	9.6	33.8	55.2	
9.8	53 8.9	7.7		9.2	50.0	38.0		9.8	46.8	31.4		9.8	20.4	44.8		9.7	39.5	14.9	
9.4	17.0	16.8		9.8	4 8.1	12.8		9.4	18 20.6	48.6		10	30.9	40.6		9.5	46 15.1	34.4	
10	40.9	6.4		8.2	12.9	50.4	K	9.0	26.4	58.1	K	9.7	36.8	5.5		9.5	19.2	50.2	
9.8	42.2	55.2		9.2	14.5	37.9		8.6	32.1	28.7	K	9.0	39.4	22.9	K	10	24.7	9.5	
9.6	52.1	53.8		10	50.8	0.2		9.5	34.1	32.0		9.3	42.0	21.1		8.4	32.0	15.1	K
9.6	52.8	11.7		8.6	52.5	10.4	M	9.3	49.6	18.9	M	9.4	33 6.1	11.2		9.6	55.2	28.1	
9.5	59.4	9.7		9.6	5 11.7	17.6		10	19 7.7	59.2		7.2	11.8	29.8	K	8.9	59.3	26.6	K
10	54 13.1	34.6		7.5	46.6	28.3	K	9.8	15.6	17.1		9.5	16.4	47.5		9.8	47 18.1	30.6	
9.7	16.5	20.0		9.7	49.0	31.2		9.0	28.0	6.9	K	9.8	42.8	28.4		10	23.8	10.5	
9.4	29.7	19.1		9.2	6 3.7	8.7	K	9.5	20 1.6	36.1		9.5	34 4.3	45.8		9.8	44.8	2.1	
9.9	37.4	13.3		9.2	3.9	40.1		9.0	5.5	0.7	K	9.8	48.9	42.3		6.8	48 7.1	57.8	B
9.2	38.9	55.9		7.0	18.1	39.6	K	9.8	21.0	6.1		9.4	57.0	12.4		9.5	14.5	15.9	
9.8	40.2	50.0		9.7	31.3	46.2		9.2	26.5	22.9	K	8.0	35 6.7	5.4		9.2	16.0	35.8	M
10	55 13.0	22.9		9.0	40.6	20.1	M	10	21 9.0	9.4		10	22.3	25.8		7.9	41.4	8.6	K
10	14.6	33.8		10	46.3	50.1		9.0	13.5	55.9	K	8.5	45.3	34.1	K	9.0	49.1	37.4	M
9.8	29.8	56.6		9.4	57.2	4.3		9.2	38.1	35.0		9.5	49.8	40.1		9.5	50.4	19.1	
10	49.2	17.2		9.4	7 35.8	35.2		9.7	40.9	57.8		9.5	50.6	26.5		8.7	55.4	57.1	L
9.9	55.7	25.8		9.0	48.9	49.3	K	9.5	22 5.5	36.8		9.6	36 35.8	40.8		9.8	49 4.7	42.6	
9.1	56 4.5	8.9	K	9.6	50.8	15.3		9.4	9.5	17.2		9.5	37 6.3	49.8		10	27.6	31.7	
9.9	16.5	9.5		9.4	8 18.5	16.5		9.0	21.0	30.1		9.1	24.8	19.7		9.6	38.0	6.3	
9.9	40.1	19.0		9.9	29.3	36.0		9.0	30.2	11.1		9.5	25.4	52.9		9.1	46.0	54.4	K

4301—4360				4361—4420				4421—4480				4481—4540				4541—4600			
15h—16h		—13°		16h		—13°		16h		—13°		16h		—13°		16h—17h		—13°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.3	50	3.1	22.1	8.0	2	56.8	36.5 K	9.8	17	8.7	30.2	9.9	34	35.6	7.2	9.6	57	8.5	22.8
5.0		5.4	51.5 K	9.4	3	4.8	27.8	10		25.1	13.8	7.3	35	7.7	45.0 K	9.0		45.9	28.5
9.8		6.9	14.7	9.7		7.2	15.7	9.4		32.0	25.5	9.5		15.8	51.4	7.3	58	17.2	43.8 K
9.2		10.6	16.9	9.8		24.8	48.6	8.9		43.1	41.1	9.5		25.3	11.4	8.9	59	10.2	32.7 K
7.2		22.5	1.4 K	9.4		28.8	14.5	9.2		52.6	47.4	9.5		26.9	2.2	9.0		22.5	56.9
9.4		33.0	11.0	10		33.7	12.1	9.3	18	7.9	17.2	8.8		37.6	52.4	9.2		52.8	15.8
9.2		39.6	33.5	9.1		34.3	35.6 K	9.2		26.0	52.3	8.7		37.6	45.6 K	9.1	0	2.8	53.0
9.4	51	38.9	0.3	9.2		39.8	43.4	10		28.6	49.9	10	36	1.2	21.9	9.2		51.7	30.9
9.5		55.0	46.6	10		47.7	30.4	8.5		41.5	30.8	9.9		1.7	45.6	9.1	1	6.7	33.4
9.9	52	1.5	49.8	8.6	4	14.1	21.3 L	8.9	19	2.4	18.3	9.7		5.0	7.7	9.8		8.3	1.0
8.9		24.0	2.5 K	9.5		15.9	53.6	9.6		10.6	54.3	9.7		13.5	47.9	9.5		57.8	5.0
9.5		25.4	6.0	10		18.2	14.1	9.4		15.9	11.4	10		13.6	2.0	10		58.3	10.7
9.5		27.3	17.9	9.0		19.3	36.9	9.1		29.1	48.9	10		22.5	48.2	8.4	2	1.7	40.1
9.5		32.5	33.0	9.1		24.5	18.9	10		36.6	47.6	9.4		24.1	41.5	9.4		1.8	2.4
9.5	53	16.9	5.7	9.9		44.3	42.3	9.0	20	5.5	29.3	7.5		31.5	48.4 K	9.4		16.8	44.6
9.2		32.3	59.5	9.9		45.2	27.6	9.3		6.5	37.6	9.8		46.7	2.2	9.4		19.5	9.0
10		44.5	55.6	9.1		48.9	24.3	6.8		21.6	3.9 K	9.4		51.6	35.8	9.5		20.2	13.5
9.6	54	2.9	32.1	8.5		51.3	39.4	10		53.4	5.6	9.8		54.3	17.2	9.0		21.1	31.1 M
10		5.0	28.5	9.1	5	0.6	26.7	9.5		54.8	19.7	9.8	37	4.9	23.7	9.5		22.3	28.6
9.1		16.5	45.0	10		29.8	52.1	7.2	21	17.8	14.7 K	9.7		13.6	7.4	9.5		43.8	12.0
9.4		25.7	16.1	9.4		51.7	5.7	9.1		21.9	28.9	9.6		58.7	59.0	9.5		58.4	22.5
9.8		39.9	6.8	9.6		55.1	57.5	9.4		39.4	57.2	9.7	38	5.1	17.2	8.7	3	19.2	1.3 K
8.0		45.5	24.7 B	9.2		58.9	35.8	9.4		48.0	53.5	9.4		34.4	34.8	9.9		19.7	32.8
10		52.5	47.2	9.0	6	1.7	37.2 K	9.5		57.5	27.9	7.6		39.0	3.9 K	9.5		51.0	18.9
9.8		53.1	55.5	9.0		7.3	47.6 K	10	22	34.4	1.3	9.4	39	11.2	26.9	9.7	4	9.2	19.9
9.5	55	18.4	34.0	10	7	18.4	56.5	9.8	23	11.2	15.4	8.8		12.2	33.5	9.1		44.2	12.5
10		26.9	32.9	9.0		40.8	1.8	9.4		19.5	17.2	9.7	40	3.7	11.8	9.8	5	2.3	31.4
9.5		43.2	47.5	9.8		57.6	15.2	9.7		38.0	56.2	9.0		36.3	3.1	9.3		12.7	13.6
9.3	56	5.0	26.7	9.0	8	22.8	16.9 K	9.3		49.4	51.5	9.3	41	15.7	13.4	8.7		44.9	7.0 K
9.2		11.5	21.8	9.7		51.2	26.5	9.3		55.1	31.5	9.1		20.6	23.8	8.7		59.8	6.4 K
8.8		22.0	55.1	9.8		53.7	0.4	9.7	24	38.8	16.2	9.3	42	48.7	26.6	9.5	6	49.0	19.6
10		45.7	57.7	9.1	9	12.2	19.3	9.5	25	3.0	19.9	8.3	43	6.6	20.5 K	9.1		56.2	43.5
9.8		58.4	26.5	10		13.0	16.9	8.5		19.5	51.4 K	9.3		33.6	11.9	9.0	7	9.7	46.9
9.9	57	36.3	35.0	7.0		43.6	0.1 Sj	9.1	26	25.4	30.2	8.9	44	32.0	46.2 M	9.1		30.9	4.2
9.4		59.9	15.5	7.5		53.7	4.2 K	9.8	28	9.9	32.3	9.1		41.4	6.8	9.4		31.2	30.6
8.2	58	0.6	29.6 M	9.4		59.2	48.3	9.1		18.8	4.6	10	45	54.0	48.1	9.0		40.2	28.8
7.8		24.9	54.8 B	9.4	10	26.1	28.5	8.8		26.7	18.0	9.5	46	36.4	27.6	8.6		45.0	19.8
9.5		32.9	44.1	9.2		31.1	24.6	8.6		28.5	56.3 M	9.9	47	1.8	1.1	9.8	8	1.8	6.6
9.0		39.6	31.5	9.5		56.7	42.3	7.8		35.8	25.4 K	9.0		27.2	35.3	9.8		37.3	13.5
9.4		39.9	52.9	9.2	11	9.9	30.1	9.9		41.7	23.6	9.7		51.4	17.8	8.5	9	23.7	43.7
9.5		54.8	14.4	10		22.7	31.5	9.6		48.8	25.1	9.7	48	14.6	27.4	9.1		39.7	23.8
7.0		58.4	40.4 B	9.5		30.0	14.9	10	29	5.8	25.3	9.3		42.3	26.9	9.5	10	10.2	18.5
9.5	59	1.3	25.0	9.7		40.6	7.3	9.5		43.3	57.5	9.8		43.4	5.6	9.3		40.7	56.7
8.8		33.8	6.7 K	9.0		47.7	12.0	8.9	30	0.4	13.3	10	49	25.2	28.9	9.4	11	20.1	38.1
9.3		38.8	17.5	10	12	11.6	3.3	9.3		9.8	27.1	9.8		40.0	22.5	9.6		32.1	10.6
8.5	0	5.4	32.7 K	8.5		13.1	19.5 L	8.8		33.9	48.1	8.9	50	13.6	9.3	9.4		42.7	52.5
7.5		10.8	22.2 K	10		13.6	45.5	9.8		40.3	32.9	10	52	50.7	21.9	9.6		47.1	24.3
10		34.7	11.6	10		19.2	56.8	9.0		59.2	8.4	7.0	53	1.2	20.1 B	9.8	12	11.2	28.1
9.0		48.9	57.4	10		54.1	45.2	9.6	31	44.0	36.6	9.8		2.4	45.0	8.8		12.6	38.4
9.5		52.4	42.9	10		58.1	10.8	9.6		44.3	35.0	9.6		35.7	52.6	9.1		17.2	21.7
9.1	1	17.4	53.0 K	9.3	13	21.1	24.9	9.7	32	27.7	13.4	8.4		42.5	9.4 K	9.7		43.6	20.3
9.7		28.8	4.3	8.9		27.6	25.2	9.1		37.6	21.2	9.5	54	17.3	21.0	9.2	13	16.4	55.1
9.6		42.8	38.5	9.7		45.1	44.1	9.8		46.5	59.4	9.3		42.3	46.1	9.5		19.4	6.0
10		54.6	39.1	9.0	14	11.9	7.3 K	9.0		50.2	29.6	9.4	55	5.3	52.9	9.4		33.7	56.0
9.5	2	6.9	37.6	9.2		13.1	28.5	9.6	33	2.7	4.8	10		55.4	26.3	9.2		39.4	53.8
8.9		11.6	17.8 M	9.3		48.4	37.0	8.1		13.8	6.5 K	8.7	56	15.2	51.3 K	8.3	14	13.6	52.6 M
9.1		37.8	7.4	8.9	15	10.5	37.9 K	10		31.3	34.2	9.6		24.6	15.5	9.2		29.4	50.5
9.1		38.3	24.0	8.3	16	13.8	17.6 K	8.7		34.0	4.8	9.5		49.7	20.1	9.4		38.7	59.0
9.6		41.6	16.6	8.9		57.6	42.2	9.7		41.7	9.3	9.5		49.8	10.6	9.6		44.6	59.8
9.3		53.2	17.6	9.4	17	3.9	15.6	9.4	34	17.2	58.1	8.9		52.6	57.9	9.1	15	3.7	35.6

4337: 24h88 54′40″.4 B_3, Ep. 1868.42 4558: 21h77 31′43″.1 B_1, Ep. 1883.46

4601—4660				4661—4720				4721—4780				4781—4840				4841—4900			
	17h	−13°			17h	−13°			17h	−13°			17h	−13°			17h−18h	−13°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.1	15 16.6	35.1	M	9.0	27 2.5	36.4	M	9.2	34 19.2	12.8		9.4	45 7.5	49.1		9.9	55 36.5	14.8	
9.8	43.2	11.7		9.3	4.0	30.7		9.4	27.1	49.0		9.4	27.3	16.0		9.8	43.9	43.2	
9.1	46.8	15.1		10	9.0	44.0		9.7	35.0	18.4		9.9	33.6	31.8		9.4	56 21.5	36.2	
9.0	16 1.4	3.6		8.8	14.5	53.1	K	9.8	36.6	22.0		9.7	54.2	6.6		8.8	57.5	45.1	M
9.7	3.7	3.4		9.6	14.6	1.9		9.5	35 9.3	26.3		9.8	46 3.0	16.3		9.5	57 1.3	5.5	—
9.2	25.1	3.4	K	9.0	21.9	0.6		10	9.5	58.0		9.4	57.0	44.2		9.8	4.7	56.8	
7.7	31.9	9.2	K	10	24.1	41.1		9.5	20.8	8.2		9.5	47 7.0	58.7		9.8	6.1	31.0	
9.7	17 4.5	12.6		9.4	25.3	7.3		8.8	24.5	36.4	K	9.3	7.2	11.7		9.5	35.0	34.1	
9.2	24.6	34.4		9.0	33.4	47.5	K	9.3	26.1	41.4		9.4	11.0	57.6		9.0	50.3	39.1	
9.5	42.2	53.7		9.5	34.1	19.6		8.8	32.4	3.7	K	9.2	23.2	17.9		9.8	58 43.0	13.7	
9.8	54.1	46.1		9.3	37.0	48.6		9.8	35.2	1.3		9.5	48 5.7	9.5		9.8	47.6	18.9	
9.0	18 7.2	44.3	M	9.6	38.6	34.5		6.3	38.0	25.5	K	9.0	17.0	25.2	M	8.3	51.1	14.9	K
9.4	18.4	1.6		9.8	39.9	19.8		9.5	47.6	14.3		9.8	21.5	47.0		10	54.0	50.5	
8.5	32.3	16.0	K	8.8	48.3	51.9	K	9.8	48.5	24.8		9.3	26.7	10.4		9.4	59 2.5	30.6	
9.4	45.7	24.1		9.6	50.5	41.5		9.8	49.3	27.5		9.6	28.4	13.3		9.8	43.5	45.3	
10	55.1	42.1		9.8	53.7	58.1		9.2	53.4	5.5	K	9.2	39.1	4.8		9.4	50.2	58.9	
8.7	19 2.2	11.8	M	8.5	28 13.1	40.1	M	9.4	36 19.4	0.2		9.5	50.9	45.4		9.5	56.0	42.5	
10	10.7	47.3		8.2	22.6	56.3	K	9.5	40.5	12.4		7.8	56.0	37.7	M	9.5	58.4	45.2	
8.7	10.7	54.1	K	9.3	24.0	44.4		9.5	44.5	14.6		9.2	49 3.2	7.6		10	0 10.1	57.9	
9.2	12.1	44.7		9.8	32.6	47.8		8.2	44.6	29.1	L	9.8	7.5	57.5		10	41.0	43.4	
9.0	28.9	6.3		9.2	44.1	33.6		8.0	37 35.6	57.6	K	9.9	9.5	43.8		10	1 5.4	32.0	
10	46.8	10.5		7.6	59.3	54.3	K	9.5	42.3	54.2		8.9	43.8	9.6	M	9.1	27.5	51.1	
9.8	47.2	56.5		9.8	29 6.0	41.3		9.5	43.5	43.0		9.3	44.1	23.4		6.3	29.5	57.3	M
9.6	20 7.6	10.8		9.3	7.5	51.1		9.3	54.9	2.7		9.5	48.7	2.7		9.5	50.0	48.4	
9.8	25.5	49.2		9.2	7.9	18.2		7.2	38 9.4	14.6	K	9.8	50 8.5	50.6		9.4	50.0	34.4	
10	26.5	24.1		9.7	35.0	24.6		10	27.1	42.4		9.8	28.0	56.6		9.6	2 10.5	51.9	
7.7	54.0	57.1	K	9.4	35.8	8.9		9.8	39 9.1	4.5		9.0	31.8	3.1		9.3	11.5	36.5	
9.3	21 1.5	14.3		8.9	43.1	39.3	M	9.2	16.5	10.7	M	9.1	46.5	58.2		9.8	21.0	37.0	
8.8	14.2	24.9	M	9.6	49.1	39.7		8.2	22.0	42.0	K	9.1	51.5	45.7		8.8	36.3	1.0	
9.6	22.9	10.5		8.8	30 16.1	19.5		9.5	31.1	20.2		8.0	51 13.5	41.0	K	9.1	3 0.2	57.4	
9.8	36.8	9.8		9.3	19.4	14.2		9.3	36.6	11.5		8.2	17.3	0.7	K	9.6	9.5	41.0	
9.5	49.1	37.6		9.8	27.0	22.8		8.9	43.5	23.2	M	9.0	32.0	44.1		10	21.0	45.3	
9.2	22 29.1	34.5		9.5	27.8	23.6	M	8.2	52.1	32.6	K	9.0	35.5	22.3		9.1	33.3	2.2	
9.1	32.1	14.0	M	9.7	42.6	59.3		10	40 4.9	0.8		9.5	47.0	59.4		9.8	45.0	25.4	
9.8	39.4	4.0		9.3	48.5	10.5		9.7	8.1	14.7		9.8	52 5.8	15.3		9.0	54.5	49.6	
9.5	57.3	2.4		7.5	31 17.5	33.7	L	10	43.6	44.6		9.8	9.5	25.3		9.5	58.0	41.9	
9.7	23 6.1	15.9		9.0	19.6	38.6		10	48.0	51.1		9.1	21.8	11.9		9.0	4 1.5	33.0	
9.7	34.1	15.1		9.8	30.0	53.1		9.3	41 13.6	58.7		9.5	26.5	20.8		9.7	7.1	17.7	
8.9	39.6	29.1		9.8	31.9	1.8		9.1	26.0	24.9		9.4	30.0	23.5		9.2	22.8	12.0	
9.6	24 0.3	57.5		9.3	35.8	12.3		9.8	47.1	59.3		8.0	31.5	45.8	K	9.5	23.6	9.1	
8.3	1.6	34.0	K	9.1	55.2	11.5	M	9.4	42 6.1	19.1		9.3	42.5	20.8		9.5	27.5	38.8	
9.2	6.9	1.3		9.8	32 2.6	38.3		9.7	18.4	20.0		9.5	42.8	4.5		9.8	48.5	45.3	
9.2	27.6	25.9		10	8.1	52.1		9.5	38.5	39.1		9.5	46.5	20.6		9.8	5 11.7	18.1	
9.1	31.6	59.4		9.1	10.1	13.6	M	9.5	53.1	21.2		9.6	53 12.9	37.7		9.5	21.5	25.9	
8.5	37.5	12.2		10	29.9	2.3		8.5	58.6	55.1	K	9.0	20.5	37.5	M	9.8	35.9	54.8	
6.5	39.1	21.8	L	10	30.1	11.6		9.5	43 1.0	49.0		8.7	24.5	34.2	M	9.8	39.0	47.1	
9.8	49.3	55.2		9.8	42.5	57.8		8.7	3.3	8.1	B	10	32.2	40.9		9.2	55.1	21.7	
9.8	25 1.1	54.1		10	33 2.0	46.0		8.7	21.8	55.0	K	10	32.7	56.6		9.3	6 6.6	8.6	
10	13.6	54.5		9.3	9.6	25.7		9.4	27.6	44.4		9.3	40.0	21.5		9.4	25.0	26.1	
9.1	25.9	7.8		9.3	17.5	48.8		9.1	33.2	34.1		9.1	40.9	59.0		9.4	27.1	30.5	
8.8	31.6	52.5		8.0	35.1	14.2	K	9.6	36.1	14.5		9.5	43.3	48.9		9.5	31.8	10.7	
9.8	34.6	23.6		9.3	37.3	3.4		9.8	50.2	9.9		9.6	45.9	41.0		10	44.5	41.8	
7.7	40.1	24.0	K	9.3	38.6	11.9		9.2	53.4	12.0		8.4	46.3	8.3	L	8.9	7 7.5	56.9	K
9.9	26 19.1	47.7		9.3	41.1	59.1		9.5	58.0	28.7		8.9	53.2	2.5	L	9.8	20.0	25.8	
9.8	32.2	29.4		8.2	53.0	51.8		9.8	44 1.5	21.0		8.7	54 24.5	11.6		9.4	23.7	16.7	
9.4	36.6	31.4		9.4	55.1	43.8		8.7	7.2	36.8	M	10	36.0	52.7		9.3	32.5	14.0	
9.8	39.4	6.7		9.0	34 2.6	38.7	K	10	32.3	37.1		9.7	36.8	37.8		7.8	42.0	36.6	M
9.0	41.1	45.0	K	10	4.0	33.3		9.4	39.7	17.4		10	52.8	41.3		9.8	48.5	16.0	
8.7	41.1	40.3	K	9.2	11.3	9.0	M	7.2	52.5	36.5	K	9.5	57.0	21.5		10	8 1.4	7.4	
6.8	55.1	31.6	M	9.2	12.8	33.8		9.1	56.5	30.5		9.0	55 23.7	14.9		10	3.7	10.0	

4901—4960				4961—5020				5021—5080				5081—5140				5141—5200			
	18h	−13°			18h	−13°			18h	−13°			18h	−13°			18h	−13°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.4	8 7.0	1.3		9.0	15 37.3	35.5		9.3	24 13.4	57.1		9.8	35 48.9	8.2		9.7	46 2.4	26.5	
9.4	19.5	56.8		9.4	39.2	4.5		9.3	16.5	15.9		9.7	36 3.3	37.0		9.0	3.1	43.5	M
9.4	28.5	27.8		9.0	50.3	32.6		8.7	39.5	9.5		9.1	14.4	21.9		8.5	15.1	11.0	M
9.1	31.7	5.6	K	9.6	16 13.7	57.9		9.6	59.2	27.1		8.8	27.3	1.1		9.4	20.8	46.8	
9.8	46.8	22.3		9.3	20.8	43.7		8.3	25 2.8	36.0	M	10	31.6	29.8		10	31.4	35.6	
9.1	48.0	53.1	M	9.1	21.6	0.6		10	9.5	30.5		9.9	35.1	41.4		9.0	35.3	37.5	M
9.8	9 1.7	19.2		9.2	26.2	45.0		9.3	21.1	13.7		10	48.7	12.6		9.5	44.9	24.5	
9.3	17.7	40.5		9.0	26.8	59.0		9.6	24.2	14.2		9.8	55.5	52.5		8.9	56.8	5.2	
9.1	24.0	30.6		9.0	46.8	24.3		9.5	46.3	49.6		9.8	37 13.3	21.0		9.8	57.9	48.1	
9.1	27.9	53.8		9.1	50.3	36.1		9.0	52.8	24.0		9.4	16.6	57.3		9.4	59.4	51.7	
9.4	29.6	12.7		9.3	17 2.3	44.4		8.3	26 0.5	12.1	K	9.1	16.8	58.3		9.2	47 19.5	13.0	
9.3	36.9	53.8		9.8	24.2	23.7		8.5	5.5	9.9	K	10	26.7	8.4		9.2	22.1	6.5	M
9.4	47.4	17.4		9.7	26.2	44.0		9.0	8.1	35.8	M	7.8	27.7	48.9	K	9.7	29.7	58.9	
9.5	49.1	47.9		9.8	46.7	40.4		9.2	21.2	17.8		9.3	34.0	37.0		8.7	32.2	14.4	M
9.2	52.6	35.8		8.0	18 6.3	26.5	K	9.8	30.3	46.2		9.8	57.0	15.2		9.5	44.4	51.0	
8.3	53.9	12.6		9.2	7.4	18.4		9.0	32.8	21.9		9.4	38 14.2	54.3		8.8	56.0	8.7	
9.5	55.2	39.7		8.3	11.7	4.5	K	8.0	35.8	32.6	M	9.7	39 1.7	19.3		9.4	48 25.9	58.1	
9.2	10 8.8	29.5		8.8	16.8	16.2		9.2	41.5	59.7		9.5	13.1	18.3		9.3	34.7	35.3	
8.7	10.0	26.3		9.0	27.7	44.3		9.3	44.3	58.9		9.2	24.8	26.4		9.1	52.5	14.3	
9.2	14.3	53.3		10	31.3	29.1		9.8	54.4	54.8		9.9	40.4	48.5		9.4	53.5	53.6	
9.2	17.0	53.2		8.3	44.0	56.0	K	9.3	27 17.2	3.9		9.5	43.6	54.3		9.6	49 15.3	31.6	
9.1	17.6	6.0		9.5	53.8	48.3	M	8.8	23.7	7.6	M	9.7	58.3	46.7		7.8	15.8	17.2	K
9.3	19.4	48.2		9.4	19 2.3	36.1		9.7	30.1	19.3		9.8	40 18.9	53.9		9.2	28.8	42.0	
9.5	20.6	57.5		9.4	16.0	40.4		8.8	32.3	25.8		9.1	28.6	38.0		9.5	45.2	17.3	
8.3	22.7	50.7	K	9.4	19.3	31.5		8.3	48.8	9.9	M	9.0	35.5	21.6	K	9.0	46.8	47.3	
8.3	23.2	50.8	K	10	22.2	22.8		8.0	59.4	56.8	L	9.7	36.0	17.0		9.3	50 23.2	33.8	
9.2	27.1	48.4		9.2	37.3	52.5		7.5	28 3.7	50.8	L	9.2	37.3	38.7		9.5	32.7	47.1	
9.7	29.7	49.9		8.8	38.3	44.7	K	9.0	12.3	25.7		9.5	42.3	10.0		9.6	56.8	56.9	
9.2	32.1	49.4		9.5	52.2	49.6		9.8	32.2	3.1		9.2	55.5	12.2		9.5	58.7	43.7	
9.1	39.6	52.6		9.5	20 7.8	11.2		9.4	50.7	56.5		10	41 20.1	55.7		9.1	51 13.6	50.5	
8.2	42.3	35.6	L	9.8	17.7	3.2		9.0	57.8	1.0		9.4	33.6	49.2		9.8	14.4	52.1	
9.0	43.1	51.7	M	8.5	27.0	5.0	Sj	9.0	29 8.5	11.5		9.3	43.2	24.5		5.5	15.1	1.7	K
9.8	51.8	52.0		9.0	27.9	35.1		9.4	24.9	16.1		9.8	51.0	40.6		9.1	24.3	3.7	K
9.3	52.2	58.2		9.5	37.3	31.6		9.5	36.8	59.2		9.0	52.6	25.9	K	9.1	32.8	36.2	
9.5	54.6	46.4		8.5	43.4	2.6	K	7.3	43.4	35.2	K	8.9	54.0	25.8	K	8.9	41.7	43.0	
9.4	56.7	59.8		9.1	57.0	42.8		9.5	30 15.4	55.3		9.6	56.3	4.2		9.2	57.8	32.7	
9.8	11 6.1	57.9		8.0	21 11.3	41.4	K	9.0	25.3	26.1		9.3	42 6.7	24.9		9.2	52 2.5	16.6	
9.5	37.3	27.0		9.4	26.7	43.4		9.8	27.8	57.1		9.7	18.6	20.7		9.5	9.6	33.8	
9.5	38.3	31.2		9.4	34.8	15.8		9.1	36.3	32.1		6.5	19.3	43.8	K	8.5	16.9	36.7	K
9.9	44.2	43.3		9.5	43.7	0.0		8.2	40.5	54.2	K	9.5	20.3	27.6		10	27.5	42.5	
9.5	53.1	6.5		9.1	46.8	16.0		9.2	31 13.3	58.6		9.5	28.8	46.9		9.0	30.1	41.8	K
9.5	12 15.0	45.2		9.0	48.8	35.1	K	9.2	26.3	55.2		9.0	35.9	56.0	M	9.1	35.5	58.7	
9.4	15.2	0.7		8.3	51.7	2.3	K	9.4	32 3.2	18.1		8.5	52.1	36.4	K	9.0	53 0.2	11.4	M
9.8	22.2	22.5		9.7	52.7	44.9		8.5	8.5	11.8	K	9.3	43 20.5	14.7		9.3	1.2	38.1	
9.6	30.5	37.0		10	22 3.9	58.6		9.0	13.7	32.5		9.5	23.4	11.8		9.0	3.3	31.6	M
10	34.8	36.6		9.0	7.0	26.7		9.7	17.5	14.8		9.0	26.4	4.8	M	9.3	6.2	53.5	
8.8	13 6.0	51.1	M	9.4	14.3	57.9		8.2	36.1	27.8	K	10	36.3	32.0		9.6	8.2	44.5	
9.7	9.0	39.1		9.5	22.0	11.6		9.1	46.6	11.8		9.2	45.8	54.2		9.5	20.7	47.1	
8.9	11.8	9.7	M	8.8	24.7	17.0	K	9.7	47.1	29.9		9.8	44 1.9	21.2		9.5	33.2	55.5	
9.8	46.8	18.2		9.8	35.4	58.5		9.5	51.4	16.2		9.0	20.8	38.2	K	9.5	36.3	13.2	
10	49.3	22.5		9.0	36.3	44.5	K	7.8	57.3	59.7	K	9.5	35.8	38.2		9.4	46.4	7.6	
8.9	14 8.7	3.2	M	9.5	38.3	59.7		9.8	33 0.5	8.4		9.5	39.9	17.6		9.1	50.7	52.9	M
9.4	17.1	7.7		9.0	23 2.1	54.2	K	9.2	9.5	58.6		8.8	40.4	58.3	M	9.5	54 1.1	19.7	
9.6	20.2	10.4		9.5	8.8	12.4		9.3	20.1	31.8		9.8	43.2	8.2		7.8	3.2	27.7	K
9.3	33.7	44.8		9.5	20.3	39.9		9.7	32.6	44.5		9.5	45 2.3	33.4		9.2	6.9	5.8	
9.7	42.4	14.7		9.3	27.2	54.3		9.7	57.7	46.5		9.3	6.8	5.5		9.3	14.8	12.9	
9.4	43.5	28.2		9.5	28.2	43.5		10	34 2.1	39.5		9.5	44.7	23.4		8.9	28.9	22.4	K
8.2	15 4.8	39.9	K	9.2	31.0	39.4		9.7	35.2	58.2		8.7	47.3	57.6	L	9.5	36.8	59.8	
9.3	17.2	0.7		9.7	53.1	14.1		9.7	35 13.1	25.1		9.2	58.6	55.4		9.5	42.9	49.5	
9.6	19.4	17.1		10	24 11.3	48.6		9.5	31.9	1.2		7.8	59.2	47.8	L	9.0	43.4	21.8	K

5201—5260				5261—5320				5321—5380				5381—5440				5441—5500			
18h—19h		—13°		19h		—13°		19h		—13°		19h		—13°		19h		—13°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	54 46.2	43.1		10	2 48.3	32.8		8.7	12 21.3	31.0	K	10	22 39.2	22.4		10	32 55.7	25.9	
9.5	59.0	37.1		9.4	50.9	21.5		9.5	29.0	11.1		9.3	46.4	38.4		8.8	33 8.7	31.1	
9.8	55 1.1	13.9		9.6	3 16.4	57.5		9.5	33.3	20.5		9.4	47.1	26.1		9.3	13.8	46.0	
9.4	27.2	55.0		9.0	24.2	59.3		9.8	34.1	8.6		8.8	47.6	16.5	K	9.4	27.2	37.5	
9.8	28.0	59.7		9.8	24.3	36.6		10	53.5	31.7		8.0	49.1	40.8	M	9.8	31.2	16.2	
10	37.8	46.4		9.6	26.4	59.2		8.0	13 10.5	24.1	Sj	9.5	23 3.2	4.7		9.5	34 10.3	46.7	
9.5	46.9	1.0		9.4	34.5	8.0		9.3	12.0	45.5		10	14.1	19.0		8.1	18.3	39.6	K
9.1	50.8	39.4		9.5	36.3	22.0		8.3	28.1	2.2	M	10	38.2	27.1		9.8	27.2	46.5	
9.5	58.8	26.2		9.0	4 5.3	42.5	K	9.8	36.0	12.5		9.5	54.1	33.0		9.8	38.8	42.9	
8.6	56 6.0	59.5	K	9.3	8.0	2.9		9.2	46.7	16.1		8.8	24 6.5	0.5	M	9.5	44.4	25.5	
9.5	30.7	10.3		9.3	45.2	8.4		9.3	52.0	41.0		9.3	15.2	39.3		9.2	48.2	10.9	
9.5	37.4	33.5		9.5	49.4	35.2		9.5	14 38.1	52.4		9.5	47.0	56.3		9.9	35 1.8	51.2	
10	52.3	54.8		9.4	51.8	51.3		9.3	43.0	13.3		10	25 6.4	7.0		9.5	35.3	39.2	
9.5	58.6	29.2		10	5 5.9	11.9		9.7	15 17.5	59.6		9.8	16.1	32.5		9.9	53.4	54.7	
9.9	57 16.9	53.4		9.0	19.0	58.7	M	9.4	20.6	1.1		8.9	30.3	27.6	M	9.8	57.2	22.1	
9.3	30.2	18.6		9.5	21.4	29.4		8.2	23.0	32.0	M	9.8	31.6	4.8		9.5	36 8.4	12.9	
9.8	37.8	23.1		9.5	25.3	15.8		9.8	24.4	33.2		8.9	52.0	16.9	M	9.9	16.8	12.2	
9.9	41.9	57.0		9.3	57.2	9.3		9.7	32.9	33.2		9.3	26 7.7	1.1		9.7	17.5	6.1	
9.6	46.2	58.4		9.8	6 3.4	20.0		10	52.6	50.8		7.3	19.5	14.0	K	8.7	23.3	44.3	K
9.7	49.6	37.6		9.4	29.9	37.7		9.7	58.3	13.3		9.0	24.6	35.7		9.3	30.1	48.7	
10	54.8	18.0		8.5	32.0	2.9	K	9.5	16 8.8	37.0		9.8	39.2	38.3		9.8	31.8	47.0	
9.4	55.2	42.7		9.0	49.9	21.3		8.5	36.5	37.4	M	9.8	47.7	10.9		7.2	37 3.3	4.4	Sj
7.5	58 10.8	30.6	K	9.5	52.5	6.9		9.1	46.7	11.8		10	55.6	49.0		8.5	11.9	34.2	K
7.8	14.7	40.4	K	9.5	7 20.9	56.0		9.1	57.7	45.0	M	9.1	27 38.3	26.9		9.7	18.4	15.9	
10	41.9	46.4		9.5	22.4	38.3		7.9	17 0.0	42.9	K	8.0	41.1	25.0	Sj	8.6	20.8	36.5	K
9.4	44.4	7.4		9.1	37.9	15.0	M	10	1.6	17.7		9.6	28 0.2	25.1		9.5	26.8	1.5	
9.8	46.1	54.3		9.4	8 6.8	40.7		9.5	14.5	8.3		9.5	1.2	46.3		9.7	29.4	46.5	
9.2	46.5	58.8		9.1	21.4	37.4		9.5	24.8	40.3		9.5	10.1	8.1		9.8	38 5.9	29.4	
9.5	55.4	33.4		8.5	24.0	4.8	Sj	9.7	34.0	27.6		9.8	10.6	59.9		9.3	11.9	38.6	
9.5	56.9	23.4		9.4	32.9	0.4		10	43.1	19.5		9.8	24.2	40.9		9.2	40.4	26.6	
8.0	59.3	52.9	K	9.8	35.8	39.4		10	44.6	34.3		9.2	26.7	20.4		9.7	43.7	29.8	
9.4	59 2.9	54.2		9.6	39.9	40.7		9.4	49.3	58.2	M	9.8	37.7	46.0		9.5	39 7.6	59.0	
8.3	14.9	3.6	WC	9.7	43.6	31.7		9.3	55.1	55.3		9.1	39.9	28.7		8.9	16.7	26.4	K
8.5	34.8	15.5	L	9.6	43.9	39.9		9.8	18 15.5	16.8		9.5	42.8	49.0		8.4	18.2	19.2	K
8.8	41.3	30.5		9.5	44.5	59.4		9.0	16.0	33.3	M	7.0	54.7	29.1	Sj	9.5	18.5	49.7	
8.0	45.1	26.8	K	9.8	59.9	30.2		9.0	20.5	25.0	M	9.4	29 4.7	59.1		9.8	26.4	40.6	
9.5	50.1	16.4		8.8	9 13.4	4.8	M	10	46.1	54.2		9.5	12.4	8.5		9.5	33.9	9.9	
9.7	57.2	27.9		9.0	34.2	17.6	K	9.9	19 11.0	33.4		9.4	20.2	22.9		9.5	43.9	1.0	
9.8	0 3.5	27.2		9.0	45.8	42.0		9.5	23.6	18.0		9.8	26.7	5.6		9.8	46.3	14.4	
9.5	4.9	32.8		9.0	48.3	42.5		10	35.6	13.9		10	54.2	15.6		9.5	57.6	7.9	
7.2	16.8	10.7	K	9.4	54.4	0.4		9.5	39.1	52.4		9.3	55.7	11.3		8.5	40 7.3	48.2	M
9.7	28.4	8.7		9.8	10 11.1	42.1		8.8	46.1	49.0	M	9.5	30 1.2	28.5		10	10.8	32.8	
9.9	31.1	15.5		9.2	19.4	53.1		10	47.6	37.4		8.3	3.3	4.5	Sj	9.6	19.9	43.4	
9.8	34.7	10.1		9.0	20.4	24.8	K	9.8	20 6.1	28.9		9.8	31.3	41.7		9.8	23.3	8.6	
9.6	52.8	31.1		9.3	21.2	45.9		9.8	17.2	0.6		9.5	39.8	33.2		9.8	31.6	9.2	
8.5	52.9	4.7	Sj	9.2	24.5	14.2		9.8	23.6	22.4		9.8	55.7	35.2		10	43.3	15.4	
9.5	1 9.2	15.9		9.5	34.0	1.0		9.4	37.1	17.1		8.0	56.8	59.8	Sj	9.6	45.1	50.3	
9.3	11.3	32.0		9.0	40.4	21.1		9.3	51.6	32.8		9.6	31 7.8	1.2	M	9.8	49.8	25.7	
7.5	14.6	40.9	K	9.0	47.4	38.3	K	9.5	53.3	25.8		9.4	11.7	59.0		9.8	52.9	56.0	
9.5	15.4	18.3		9.8	53.1	53.5		9.5	21 0.0	56.2		9.8	12.9	14.9		9.8	57.4	54.5	
9.5	21.2	6.2		8.8	55.0	35.8	K	9.5	6.3	58.2		9.5	20.2	28.9		9.5	59.4	5.9	
9.6	32.0	4.1		9.2	11 1.9	35.6	K	9.7	16.1	14.1		9.3	33.2	10.5		8.7	41 11.4	1.5	Sj
9.5	35.3	25.5		9.3	4.1	11.3		9.0	21.1	22.1		9.4	40.3	43.9		10	54.9	15.7	
9.2	46.9	3.8	M	9.1	10.5	35.4	K	9.8	52.2	53.5		9.5	51.8	12.4		9.5	58.7	35.7	
9.8	49.0	55.3		9.4	36.6	36.6		8.3	52.5	10.6		8.5	32 4.3	30.7	K	9.7	59.7	44.5	
9.6	50.2	41.5		9.2	37.8	33.6	Sj	8.4	56.1	45.1		9.5	10.2	48.7		9.8	43 7.4	19.5	
9.0	57.8	37.4		9.4	38.5	9.5		10	22 17.7	58.7		9.4	16.5	10.0		9.6	16.9	32.7	
9.5	2 8.3	22.9		9.7	49.6	24.3		9.6	18.4	3.3		9.1	30.2	13.2		9.3	22.3	48.6	
9.5	27.3	45.9		10	58.9	33.6		9.9	27.6	1.9		9.8	38.8	1.6		6.3	39.2	24.1	K
9.5	46.4	30.4		9.7	12 12.6	45.0		9.1	35.7	12.8	K	9.8	52.3	2.5		9.8	57.6	56.4	

5399: 20:43 B_0, Ep. 1874.31; 14′0″.2 B_8, Ep. 1874.28

5501—5560

m	19h m	s	—13° ′	
9.0	44	33.4	39.9	K
9.5		54.0	42.4	
9.7	45	0.2	20.9	
9.8		43.5	7.4	
8.5		47.4	10.3	M
8.5	46	2.5	3.6	
9.6		16.8	22.8	
9.2		29.4	36.1	
9.4		41.0	40.2	
10		45.2	12.2	
9.8		48.2	23.2	
8.4		48.5	55.6	K
10		51.0	0.7	
9.2		58.4	47.2	
10	47	6.5	45.9	
9.4		18.0	1.4	
9.5		25.5	1.2	
8.9		25.8	56.7	K
9.0		34.4	27.3	
9.4	48	6.3	18.8	
10		7.0	5.8	
8.5		10.1	43.6	K
9.4		27.4	14.0	
9.8		58.3	19.3	
9.8	49	2.2	5.5	
9.8		7.4	42.7	
9.2		18.4	0.7	
10		32.0	41.4	
9.0		42.5	6.9	K
9.1		56.3	8.2	
9.5	50	1.0	39.8	
9.5		26.5	32.7	
9.2		31.5	15.5	
9.8		39.0	25.8	
9.8		48.4	10.2	
9.4		48.5	43.6	
9.0		49.5	41.0	K
9.8	51	9.9	37.0	
9.3		21.3	41.8	
9.5		27.6	39.5	
9.4		44.5	0.0	
8.3	52	12.0	22.9	K
9.5		19.5	30.7	
9.8		39.0	33.0	
9.3		39.5	18.3	
9.5		58.5	29.5	
9.3	53	20.1	33.7	
9.8		39.8	31.9	
9.5		40.0	46.5	
9.7		45.5	4.8	
9.8		53.5	21.1	
9.1		56.0	58.9	
8.7	54	5.6	1.5	M
9.3		8.0	27.3	
9.5		9.8	21.7	
9.8		27.5	46.0	
8.1		31.1	6.4	K
9.5		32.9	54.5	
9.5	55	25.3	46.4	
9.5		35.6	20.5	

5561—5620

m	19h—20h m	s	—13° ′	
9.6	55	35.8	7.0	
8.8		54.8	9.9	K
10	56	12.4	5.6	
10		12.7	20.0	
9.0		29.0	40.1	
9.9		33.5	52.2	
8.7	57	14.7	16.2	L
9.3		16.7	13.1	
6.2		22.0	4.2	L
8.8		38.4	56.9	K
9.8		49.3	6.6	
8.5	58	1.5	52.0	K
9.3		10.0	16.9	
8.8		19.4	46.9	K
9.6		36.9	25.7	
9.8		38.7	5.7	
7.3		41.3	20.3	K
9.7		43.1	56.5	
9.8	59	14.4	37.7	
9.3		24.4	41.0	
9.6		34.5	29.0	
9.3		48.3	48.9	K
9.6		49.4	45.4	
10		52.5	9.7	
9.7		53.5	59.4	
9.5	0	5.2	24.9	
10		24.8	22.5	
9.7		30.5	32.4	
9.8		54.8	55.1	
9.8	1	15.9	58.8	
10		17.2	32.1	
9.5		31.3	43.3	
8.0		56.1	28.1	K
8.4	2	1.4	15.4	Sj
9.6		7.6	16.9	
9.6		10.0	54.2	
8.2		11.0	25.9	K
9.0		11.5	58.3	M
9.1		43.0	45.9	
9.7		56.7	18.0	
9.5	3	1.4	15.7	
9.0		2.1	17.3	K
10		8.5	55.4	
9.5		22.0	30.3	
10		36.5	28.1	
9.1		39.0	53.5	
10		45.1	10.1	
6.0	4	21.8	2.2	K
9.5		22.5	29.8	
9.1		36.4	37.6	
9.1		47.6	26.8	
10		55.7	15.4	
9.7	5	39.6	49.7	
9.5		43.1	28.2	
9.8		59.2	32.7	
8.5	6	6.9	55.7	M
9.1		38.4	4.5	
9.3		43.2	36.9	
7.0	7	2.1	49.2	Sj
10		20.9	4.4	

5621—5680

m	20h m	s	—13° ′	
9.0	7	33.2	30.4	
9.0		43.1	38.5	
9.8	8	13.6	18.0	
9.0		21.7	36.4	
9.3		22.9	59.9	WC
9.8		38.4	11.5	
9.0		39.9	51.2	Sj
9.9		57.8	43.6	
10	9	16.3	59.7	
8.4		31.2	17.0	Sj
10	10	0.2	28.8	
9.5		3.2	1.8	
9.8		56.5	25.3	
9.4	11	15.4	49.9	
8.0		22.9	15.0	Sj
9.0		36.7	32.3	K
8.8		40.7	54.5	Sj
9.2	12	13.8	32.0	
9.2		19.7	48.5	K
9.8		20.8	30.2	
9.4		36.3	34.6	
5.5		37.6	12.9	Sj
9.9	13	5.8	19.6	
9.9		6.9	46.2	
9.2		36.2	39.1	
10	14	2.0	44.0	
9.1		6.7	37.5	
9.6		18.3	32.6	
8.9		20.1	22.4	
10		25.3	50.2	
9.2		36.8	41.5	WC
9.5		47.0	13.7	
9.2		59.8	40.6	K
9.1	15	3.4	32.6	Sj
9.7		5.0	12.1	
9.1		17.4	36.7	K
10		28.3	44.1	
9.5		30.8	28.0	
9.6		38.0	30.7	
9.9		54.1	6.2	
8.0	16	2.5	51.4	Sj
9.4		3.3	27.5	
10		23.9	19.5	
9.5		27.8	25.8	
10		45.8	40.2	
9.6		48.3	43.5	
9.4	17	26.8	50.8	
9.0		41.6	6.4	M
9.3		56.7	15.0	
9.3	18	13.4	21.3	
9.8		50.1	32.0	
9.0	19	13.5	57.5	K
10		34.9	43.1	
10		44.9	24.3	
10	20	3.0	18.4	
9.5		4.2	2.3	
9.0		19.2	37.7	K
9.0		21.2	37.7	K
10		23.9	48.9	
7.5	21	29.0	3.9	Sj

5681—5740

m	20h m	s	—13° ′	
9.8	21	32.4	40.5	
9.8		34.9	49.6	
9.5	22	2.9	56.8	
7.5		13.0	30.4	K
9.4		16.9	36.6	
9.6		20.7	6.1	
9.8		21.3	11.0	
9.4		30.0	29.9	
9.5		43.1	10.8	
9.8	23	2.0	57.6	
9.7		34.6	42.4	
9.3		46.3	57.9	
10		46.7	37.0	
9.7	24	30.0	11.7	
9.1		30.2	9.5	K
8.8		58.0	56.1	K
9.5	25	0.7	59.3	
9.6		1.2	14.4	
10		22.8	8.3	
9.2		46.9	12.7	M
9.8	26	1.5	47.9	
8.7		9.8	52.7	K
8.5		17.7	8.0	M
9.0		33.1	53.1	
9.8		45.7	50.7	
9.3		50.6	32.6	
9.6	27	5.0	55.8	
9.5		7.5	49.1	
8.5		29.0	27.4	Sj
9.8		53.8	17.2	
9.4	28	15.1	34.6	
9.4		21.8	16.9	
7.8		53.9	14.0	Sj
9.1	29	3.1	23.2	K
9.6		6.0	23.4	
8.0		12.0	40.9	K
9.5		45.8	7.1	
9.8		53.2	35.0	
9.5	30	7.1	53.5	
8.6		21.4	7.8	K
10		26.7	54.4	
9.5		41.5	15.8	
9.5		44.1	14.3	
8.5		47.3	9.3	Sj
9.6		48.9	7.5	
10	31	19.6	17.0	
10		31.4	34.0	
9.5		45.7	32.3	
9.1	32	34.6	48.9	
9.8		37.4	48.9	
9.8	33	10.2	50.2	
9.5		36.7	54.0	
9.5		41.5	52.2	
9.0		54.7	12.3	M
10	34	30.8	50.8	
7.8		37.7	36.1	Sj
10	35	11.9	57.0	
9.8		14.1	12.5	
9.9		15.7	10.2	
9.7		30.8	13.4	

5741—5800

m	20h m	s	—13° ′	
9.7	35	31.5	53.6	
8.8		33.4	39.3	
9.1		35.8	57.4	
9.2		58.4	17.6	
9.5	36	0.2	40.4	
9.1		13.9	55.3	
9.6		16.2	54.7	
9.1		27.6	40.9	
10		34.8	17.5	
9.3	37	21.6	54.2	
9.6		26.5	1.8	
9.9		36.5	1.1	
8.8	38	16.3	20.2	K
9.1		26.0	5.5	
9.1		29.6	19.4	K
10		46.6	18.7	
9.9	39	14.6	59.8	
9.5		18.1	2.7	
10	40	10.0	14.2	
9.3		15.1	33.8	
8.9		17.9	38.1	Sj
9.5		26.8	14.8	
9.3		32.0	47.0	
9.5		32.1	6.5	
9.8		59.8	20.2	
8.2	41	5.0	8.6	L
9.0		20.7	34.9	
9.1		43.2	39.6	
9.8		58.7	53.6	
9.8	42	3.0	14.6	
9.5		26.4	57.9	
9.1		42.5	6.8	
6.3		43.2	4.8	B
9.1	43	31.0	11.5	
9.1		36.7	29.1	
10		45.6	16.0	
8.5		54.6	1.9	M
9.4	44	25.4	13.1	
7.0		30.3	44.9	K
9.3		33.8	42.4	
9.1		45.8	46.7	
9.8		56.9	50.9	
neb	45	28.7	5.2	
9.8		47.3	52.5	
9.1		48.6	7.0	B
8.5		50.3	44.7	Sj
9.1	46	5.3	34.4	
8.7		25.3	42.4	Sj
9.8	47	13.4	30.5	
8.5		21.9	48.7	K
8.0		41.0	24.8	K
10		41.8	40.4	
8.9		49.1	58.3	Sj
9.8	48	25.2	16.0	
10		39.3	20.5	
10		45.9	53.1	
10		48.7	27.8	
9.4	49	6.9	33.6	
10		35.7	26.5	
9.4		57.8	29.3	

5608: 21ᵉ11 2′20ᵉ9 B_4, Ep. 1871.64

5801—5860				5861—5920				5921—5980				5981—6040				6041—6100			
20h—21h		−13°		21h		−13°		21h		−13°		21h		−13°		21h		−13°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.4	50 3.2	57.6		10	1 22.7	41.7		9.4	15 28.6	20.8		9.8	31 11.1	36.2		9.7	45 21.5	15.6	
9.5	3.4	55.4		9.5	32.6	33.9		9.3	54.7	25.8		9.2	15.7	0.4	K	9.9	23.7	56.4	
8.5	7.9	10.2	M	9.0	45.1	13.1	Sj	6.0	16 15.1	29.4	K	9.2	25.1	44.3		9.9	44.1	1.6	
9.0	12.8	42.5		9.6	55.7	42.5		8.7	27.6	24.5	K	9.5	37.5	16.1		9.1	58.7	35.2	R
9.0	14.9	40.6		10	2 4.4	46.5		9.2	57.1	22.8		8.3	46.0	16.2	R	9.0	46 15.3	32.5	K
9.5	17.5	51.8		9.5	19.8	39.2		9.2	17 30.6	9.9		10	32 8.7	7.8		8.8	47 0.8	34.2	K
7.5	34.9	55.1	Sj	9.5	34.3	54.7		9.4	37.3	26.6		10	31.7	5.7		9.8	30.6	5.1	
9.7	58.0	11.6		9.4	42.2	42.1		9.0	18 0.3	41.1	M	9.4	33.3	11.2		9.2	36.3	17.6	K
9.5	59.8	11.9		9.3	50.7	27.4		9.8	25.8	43.8		10	43.2	36.5		9.6	56.7	18.2	
8.4	51 5.9	46.1	K	9.2	3 17.2	42.2		9.8	43.7	24.6		9.3	33 24.3	2.8	Sj	9.4	48 10.7	59.5	
9.3	30.9	31.4		9.4	19.1	18.0		8.8	19 28.9	9.4	M	9.3	48.2	38.6		9.8	14.2	3.0	
9.5	39.5	58.4		9.5	37.1	27.5		10	54.8	57.9		9.4	50.8	54.2		9.7	18.3	17.1	
6.8	55.9	36.6	L	8.9	53.7	33.0	M	9.2	57.3	15.2		9.2	34 6.1	2.6		9.5	41.8	31.9	
9.3	58.3	14.6		9.2	4 53.4	9.2	Sj	9.9	20 18.4	4.2		10	7.8	27.4		10	47.1	6.1	
9.8	52 17.5	45.3		9.5	57.1	10.7		9.8	22.9	59.1		9.8	15.0	41.1		8.6	49 12.5	40.1	M
9.5	22.1	53.1		9.4	59.2	59.3		9.8	43.4	3.7		9.8	21.1	0.6		9.5	17.2	44.3	
9.5	27.0	51.4		9.1	5 10.3	22.8		10	46.4	5.8		10	27.8	30.5		10	26.5	20.6	
9.4	51.1	56.8		8.8	42.2	24.8	Sj	9.0	48.0	30.5	R	10	35.7	20.7		9.7	31.9	59.1	
9.5	51.4	11.5		9.0	6 0.5	7.9	K	8.7	49.5	13.0	K	9.4	45.2	38.0		8.6	50 6.6	36.7	L
9.8	52.1	25.0		9.5	9.5	11.0		10	21 28.2	58.8		9.8	52.9	36.8		7.3	35.0	21.2	L
9.5	52.4	40.9		7.5	12.9	3.8	K	8.8	29.3	24.2		9.8	58.2	39.7		8.7	36.0	43.2	L
9.0	53 6.2	7.7		9.5	15.0	15.8		9.1	30.1	36.5		9.5	35 26.1	56.0		9.4	36.0	50.0	
9.7	6.5	17.5		10	24.0	4.4		10	39.0	32.4		9.5	30.3	1.7		9.5	36.6	51.3	
9.4	20.9	14.5		10	30.5	39.6		9.4	54.0	0.1		8.8	34.6	24.8	K	8.0	39.8	56.7	Sj
8.5	30.2	6.1	Sj	9.8	43.7	16.2		9.1	22 1.2	7.7	Sj	10	36 55.3	55.9		9.5	51 0.0	53.7	R
10	39.8	52.0		9.3	47.0	0.4		9.8	24.5	36.5		10	56.3	35.7		9.8	17.7	1.9	
10	50.9	27.2		10	7 10.8	43.4		9.1	37.0	3.0	K	9.6	37 26.2	20.3		9.2	27.9	30.5	Sj
9.5	54 7.5	3.1	WC	8.6	17.3	40.7	Sj	9.8	39.8	22.7		6.8	29.3	26.6	R	10	59.0	8.8	
9.4	24.2	2.7		9.5	22.4	55.8		9.2	45.9	51.1		9.3	48.4	1.9		8.9	52 17.4	23.9	K
7.0	29.2	0.6	K	9.2	44.3	41.7		9.8	47.6	43.6		8.8	55.5	11.7	Sj	8.9	35.4	32.9	K
9.0	36.7	4.5	K	6.5	8 2.9	47.9	K	9.5	23 14.5	1.9		10	58.2	50.2		9.1	40.5	37.8	K
9.9	55 15.2	49.3		10	4.0	14.1		9.8	18.3	24.0		7.7	38 26.8	15.7	K	9.2	53 3.5	30.0	
10	21.1	29.4		9.5	17.4	36.3		8.2	41.5	8.5	K	9.1	37.9	45.4		9.1	14.0	31.9	
9.4	21.3	18.2		9.8	41.0	7.1		9.4	52.9	41.9		9.5	39 4.3	15.1		7.2	14.4	42.8	Sj
9.8	30.7	7.4		10	46.9	49.5		8.3	24 3.8	23.8	M	9.2	6.2	10.2		9.9	24.0	8.6	
9.5	34.8	1.5		10	47.6	30.3		10	7.7	13.2		10	6.4	4.4		9.2	27.2	49.5	
8.0	39.5	24.9	K	6.7	9 16.5	52.4	K	8.5	18.2	40.8		9.3	14.8	27.9	R	10	36.0	54.4	
9.9	56 10.4	23.6		9.8	44.5	42.9		9.5	22.4	48.1		8.0	35.4	47.4	Sj	9.8	54 46.5	7.1	
9.9	14.2	5.6		10	10 13.0	8.4		10	25 2.0	45.3		9.1	36.9	34.7		9.1	55 13.1	50.6	
10	49.1	54.4		8.4	23.6	55.4	Sj	9.5	4.0	52.8		9.2	48.9	14.5	M	10	16.9	0.6	
8.8	57.1	43.8	Sj	8.2	38.0	12.0	M	9.0	48.9	34.9		10	40 8.4	51.9		9.4	41.0	30.3	
9.6	57 4.5	30.2		9.1	11 14.5	23.5		9.5	49.1	14.5		9.3	11.6	59.9		9.9	58.2	40.4	
9.3	13.0	18.3		9.3	21.9	49.2		9.3	26 27.5	35.1		9.4	11.9	39.7		9.8	56 17.1	52.3	
8.8	24.7	19.3		7.2	24.6	39.1	Sj	9.3	36.2	54.9		9.9	41 19.0	55.0		9.4	17.6	32.1	
10	45.5	37.1		9.4	26.0	17.7		9.5	41.1	5.2		9.8	33.0	51.5		7.2	18.0	43.1	Sj
9.6	58 13.2	2.2		9.0	41.0	24.6		9.2	54.9	12.9		9.3	46.3	14.4	R	9.7	20.3	6.5	
9.6	17.1	49.5		9.8	57.0	24.7		9.4	27 5.0	28.1		6.5	50.4	23.6	K	9.8	36.1	58.4	
8.7	25.0	34.8	Sj	9.5	12 2.9	58.0		9.1	6.9	55.2	K	10	58.2	44.5		9.4	44.4	19.0	
9.8	54.1	34.5		9.3	3.4	46.5		9.1	25.0	21.5		9.0	58.9	35.2	R	10	56.0	26.1	
8.5	59 1.0	15.7	L	8.6	5.1	35.4	K	9.1	25.8	34.0	K	9.0	42 1.4	41.0	R	9.8	58.5	23.0	
8.5	9.2	46.3	Sj	9.1	38.5	53.3		10	35.0	51.3		10	9.0	5.9		8.7	57 6.7	41.6	K
9.5	17.7	13.8		8.0	52.0	29.4	K	8.7	37.0	36.7	K	10	50.0	5.9		9.8	18.2	8.0	
9.0	39.3	53.5		9.8	13 30.6	41.7		10	28 14.6	40.0		9.4	43 30.2	11.8		9.3	54.6	33.4	
10	48.7	4.0		9.8	31.3	44.4		9.1	29 2.6	12.8	K	10	45.5	3.6		9.4	58 19.9	15.5	
10	52.1	50.5		9.8	42.2	35.8		9.8	34.0	56.3		9.3	48.2	28.5		9.6	22.8	47.2	
9.8	0 10.7	14.5		9.3	45.1	10.4		9.1	36.1	27.1	K	9.7	44 33.1	12.1		9.1	34.1	28.1	
8.2	17.1	27.5	L	9.8	56.6	27.0		9.4	44.1	33.5	K	8.5	45 4.5	39.3	Sj	9.8	50.7	11.2	
9.8	22.5	39.1		10	57.4	59.8		9.5	55.7	1.8		9.3	15.7	57.9		9.5	51.5	58.2	
9.5	24.6	20.2		9.8	14 31.2	50.4		9.5	56.5	24.1		9.8	16.9	30.6		9.9	53.0	16.6	
8.9	49.8	54.9		8.6	15 2.3	22.9	Sj	9.0	30 12.6	51.4	K	9.4	18.1	57.7		9.4	57.6	2.0	

5945: 0:84 7′56″9 B_4, Ep. 1872.23

6101—6160

	21h—22h	—13°	
m	m s	′	
9.0	59 1.4	13.0	M
9.8	26.0	19.0	
9.8	41.5	58.2	
9.8	43.2	23.0	
10	44.2	58.7	
9.8	50.3	41.8	
9.8	0 0.9	33.8	
10	47.2	31.2	
9.0	1 2.7	8.5	
9.8	10.8	46.0	
9.2	21.5	51.8	
9.1	23.8	37.7	
9.1	33.1	27.3	
9.9	36.0	21.5	
9.1	46.1	38.5	K
9.0	56.9	50.6	
9.3	2 1.4	42.3	
9.4	24.8	7.0	
8.7	30.2	2.7	K
9.4	3 0.4	48.1	
9.4	16.5	57.1	
10	24.2	49.3	
9.8	24.2	34.3	
9.0	37.0	56.4	M
9.6	37.8	19.1	
9.4	4 31.5	45.9	
9.5	31.5	43.5	
9.7	37.9	1.8	
9.2	43.6	19.5	
8.5	5 13.4	44.1	M
9.7	15.2	42.5	
9.1	35.2	43.4	M
9.4	48.7	5.7	
9.6	55.9	46.4	
9.2	6 0.6	56.3	
9.0	1.3	25.0	K
10	38.0	8.1	
9.3	38.7	4.4	
9.9	7 28.7	6.4	
9.0	32.8	27.6	
9.2	32.8	43.9	
10	51.0	59.1	
9.8	55.7	9.7	
9.4	59.3	15.0	
9.0	8 3.0	57.4	K
9.3	4.3	23.0	
9.8	22.1	43.2	
6.0	9 1.9	32.8	L
9.0	4.3	44.5	
9.8	20.7	15.7	
9.3	27.2	59.3	
9.6	42.1	46.7	
9.5	46.3	56.6	
9.3	49.4	28.8	
9.3	10 27.6	40.0	
9.4	49.4	55.7	
9.4	56.7	50.0	
9.5	11 14.0	6.4	
9.3	14.6	0.6	
10	26.0	29.2	

6161—6220

	22h	—13°	
m	m s	′	
9.5	11 31.9	28.7	
9.4	49.7	50.2	
9.3	12 10.2	49.6	
9.8	18.7	22.2	
9.5	22.3	17.3	
9.3	13 21.8	10.6	
9.5	41.6	39.2	
9.8	44.4	13.9	
9.0	53.4	21.7	
8.7	57.8	16.6	K
9.5	14 3.1	9.6	
9.5	5.1	14.3	
9.8	48.5	59.0	
9.4	15 51.2	51.6	
9.8	16 0.4	28.6	
9.5	24.3	59.0	
9.1	41.8	56.1	K
8.3	47.8	55.1	K
9.3	58.6	56.4	K
8.0	58.6	41.6	L
9.4	17 4.8	9.1	
8.9	11.3	6.7	
9.0	22.8	44.3	K
9.5	30.9	32.4	
10	39.8	24.5	
9.6	18 18.8	8.5	
8.7	24.4	32.2	K
9.2	31.7	16.6	
9.8	46.0	4.6	
10	19 4.2	44.7	
9.5	23.9	39.1	
9.0	30.1	12.8	
8.9	44.8	0.4	Sj
9.0	50.7	47.9	K
9.8	56.8	11.3	
9.3	57.6	1.3	K
9.7	20 6.5	16.4	
10	9.0	31.3	
9.0	21 6.1	38.9	
9.8	22.3	46.3	
9.6	23.2	15.2	
9.4	37.8	10.3	
9.6	22 3.7	46.3	
7.0	16.6	38.9	K
9.4	38.4	6.1	
9.5	46.4	1.4	
9.5	23 45.3	41.9	
9.8	58.2	50.8	
9.9	24 3.0	0.7	
10	25 1.2	29.5	
9.7	16.4	56.6	
9.4	18.7	56.7	
10	23.3	37.7	
9.2	26 3.0	53.8	
8.7	6.5	7.9	Sj
9.2	7.3	42.8	
9.2	8.2	29.5	
9.4	20.7	25.2	
9.5	27 43.9	42.8	
9.5	53.8	38.4	

6221—6280

	22h	—13°	
m	m s	′	
9.4	28 4.5	47.0	
8.5	5.0	37.2	Sj
9.2	31.1	41.8	K
8.8	37.1	22.7	K
9.3	29 5.2	8.2	Sj
8.0	22.9	38.8	M
9.5	42.9	39.5	
10	30 6.3	35.8	
9.5	8.1	18.4	
8.7	11.7	56.7	K
9.1	27.9	32.1	Sj
9.6	31 32.5	39.5	
10	35.4	34.3	
9.6	37.8	20.8	
8.0	51.3	21.6	B
9.0	32 1.2	2.6	Sj
10	34.5	15.0	
10	37.1	3.5	
9.3	33 2.3	19.6	
9.5	14.1	51.0	
8.7	41.5	22.2	K
9.5	51.9	58.3	
9.2	52.3	17.5	
8.8	34 3.0	38.3	Sj
9.8	6.4	1.1	
9.1	13.3	9.4	
7.7	52.0	18.6	Sj
9.4	57.7	52.3	
9.0	35 15.8	6.4	Sj
8.9	19.8	5.3	K
9.9	22.6	3.3	
9.8	25.0	28.9	
9.5	45.2	46.5	
9.5	50.2	24.7	
10	55.6	55.7	
9.4	36 19.0	25.8	
9.0	22.2	26.6	M
9.4	40.6	54.1	
9.4	53.3	25.5	
9.5	54.1	49.4	
9.8	55.9	4.0	
8.2	37 45.8	46.2	Sj
9.6	58.4	15.2	
9.3	38 15.5	24.7	
9.9	18.4	7.4	
9.5	29.7	40.7	
9.6	31.8	55.3	
9.2	49.7	39.4	
9.4	55.7	39.4	
9.9	39 16.9	6.5	
9.3	17.7	38.5	
8.5	40 4.5	16.2	K
9.0	8.0	20.6	
9.4	8.6	51.7	
9.8	17.4	17.3	
9.4	17.8	20.6	
10	50.3	52.0	
9.7	41 23.5	18.3	
9.5	57.5	6.8	
10	42 35.2	33.5	

6281—6340

	22h	—13°	
m	m s	′	
9.4	42 43.8	55.3	
8.8	50.2	12.2	
8.3	53.2	27.2	B
8.8	43 11.5	52.0	
9.6	17.6	12.1	
9.4	18.1	9.6	
9.3	54.4	4.7	
9.4	57.3	40.0	
9.1	44 23.4	42.8	
9.4	40.5	48.2	
8.9	42.0	19.2	
8.2	45 10.1	51.8	B
9.3	11.4	55.1	
9.8	40.7	22.7	
9.5	50.4	58.1	
9.5	54.6	51.9	
9.6	46 19.6	15.5	
8.7	37.9	30.8	Sj
9.5	56.9	37.7	
9.2	58.1	57.0	
10	47 30.7	8.9	
10	48 6.8	17.4	
9.0	31.7	10.3	
9.0	37.5	30.8	
9.3	52.4	23.1	
8.9	49 18.5	54.6	
9.9	34.9	33.3	
9.2	50 28.7	18.4	
9.6	36.2	58.0	
9.5	48.9	22.2	
9.5	51.7	8.9	B
9.1	51 17.7	46.5	
9.5	28.2	56.6	
9.5	28.6	18.0	
9.9	46.8	5.1	
9.5	53.9	56.0	
9.1	54.8	31.8	Sj
6.5	57.2	50.8	B
9.8	52 54.9	21.5	
9.2	53 2.5	13.5	
9.5	14.8	51.0	
8.8	36.7	35.1	K
9.7	41.8	41.4	
9.4	54 2.3	51.0	
9.5	36.1	38.1	
9.0	38.2	10.9	K
8.5	55 10.2	39.1	Sj
10	18.8	45.2	
9.5	33.5	21.7	
9.6	38.9	45.1	
8.8	56 19.4	3.8	K
9.4	36.3	44.5	
8.5	37.0	34.0	
9.4	57 10.3	0.2	
9.1	43.7	29.9	
9.5	58 13.3	35.8	
9.8	28.1	56.4	
9.0	41.9	45.0	
9.0	48.9	16.3	Sj
9.3	49.4	20.5	

6341—6400

	22h—23h	—13°	
m	m s	′	
10	58 57.8	29.6	
9.6	58.7	39.0	
9.4	59 4.4	19.5	
8.3	22.3	30.5	K
9.2	0 24.6	51.6	
9.5	1 6.1	52.6	
9.4	7.8	59.9	
9.5	12.5	7.8	
9.7	24.3	24.2	
9.6	26.4	33.8	
8.5	51.3	24.5	Sj
9.6	2 4.6	4.5	
9.7	4.9	34.9	
9.8	47.8	27.0	
8.7	3 46.8	29.2	L
9.3	47.6	32.9	
9.1	53.3	29.9	
10	53.7	4.7	
9.7	4 8.2	12.1	
9.5	16.3	9.1	
9.4	24.3	39.2	
9.3	33.5	50.4	
9.4	55.6	23.6	
8.7	5 12.8	36.9	K
8.7	13.3	22.8	Sj
9.3	17.0	55.5	
8.9	34.2	27.2	K
10	51.7	57.6	
9.4	6 32.2	25.9	
9.5	7 9.8	52.7	
9.0	52.4	9.8	
7.2	8 17.1	58.3	Sj
9.8	48.2	10.8	
9.4	56.7	43.3	
9.6	9 13.6	42.7	
9.2	26.2	21.5	
8.3	10 9.5	35.3	K
9.8	30.5	58.3	
9.4	32.4	45.4	
9.8	56.0	56.4	
9.7	59.7	18.5	
9.0	11 29.4	52.8	
10	54.7	17.5	
10	12 22.5	32.0	
9.9	13 9.4	27.0	
8.2	39.7	37.3	K
9.4	50.3	56.2	
9.6	55.5	52.4	
9.3	14 6.7	17.9	
9.3	16.5	4.0	
7.8	18.2	14.3	L
9.5	35.0	28.7	
9.6	41.0	1.3	
8.8	48.4	46.3	
8.5	58.2	35.3	Sj
9.9	15 58.3	20.4	
9.5	16 36.3	32.0	
8.8	44.1	34.4	K
9.8	47.3	57.6	
9.8	17 0.6	3.1	

6401—6420

m	23h m s	−13° ′	
9.4	17 33.9	19.3	
8.5	51.8	19.1	
9.9	18 21.3	37.0	
7.3	47.2	44.6	Sj
9.1	19 0.2	20.4	
9.4	38.9	41.7	
7.0	53.4	43.6	Sj
7.7	20 34.7	0.8	Sj
9.8	51.2	25.8	
9.8	53.7	25.8	
8.5	21 2.1	48.0	Sj
9.6	11.9	35.7	
9.4	29.7	52.1	
9.8	48.8	33.4	
9.3	22 4.2	9.9	
9.5	7.4	31.7	
9.5	10.2	51.6	
10	13.5	2.8	
8.3	25.5	40.3	Sj
9.7	23 12.1	22.5	

6421—6440

m	23h m s	−13° ′	
9.4	23 46.7	21.5	
9.5	24 1.4	56.5	
9.3	41.4	53.3	
9.9	57.8	3.4	
9.8	25 18.1	36.5	
9.6	19.3	12.8	
9.4	42.7	11.4	
6.3	43.3	24.7	Sj
8.7	50.9	28.1	K
9.4	26 1.1	27.1	
8.7	27 3.6	7.3	Sj
9.3	14.3	17.3	
9.3	25.7	55.7	
9.4	28 14.3	43.7	
9.3	25.0	54.5	
9.1	29 0.1	18.2	
9.9	28.9	21.9	
9.8	39.4	22.7	
5.5	30 9.0	52.0	K
9.1	10.7	0.6	K

6441—6460

m	23h m s	−13° ′	
9.6	30 21.5	25.0	
9.3	26.0	18.4	
9.8	32.8	18.3	
9.5	31 46.4	7.1	B
10	32 23.5	5.3	
9.2	57.1	48.9	
9.1	33 0.7	45.5	B
9.1	5.5	25.7	
9.4	34 3.0	46.6	
9.2	10.1	22.1	
9.8	50.0	20.3	
10	35 17.7	11.6	
9.4	33.3	33.0	
9.0	41.9	0.9	Sj
8.8	36 19.7	48.9	K
9.5	31.8	31.6	
8.5	41.0	59.2	K
9.9	37 33.7	28.9	
9.4	43.4	50.8	
10	45.9	32.0	

6461—6480

m	23h m s	−13° ′	
8.5	39 5.2	33.7	
9.2	23.6	14.9	
9.5	40 20.7	45.9	
9.1	55.0	47.8	
9.4	41 52.3	25.9	
9.3	42 10.3	9.3	
9.6	23.6	33.9	
9.4	48.8	45.4	
9.4	49.2	5.6	
9.3	56.8	20.8	
7.1	43 2.5	55.3	Sj
8.6	27.4	37.5	K
9.3	44 35.6	13.1	
9.3	53.7	34.6	
9.6	45 20.0	51.8	
9.4	24.1	56.0	
10	46 4.3	12.4	
10	31.2	11.6	
10	31.6	14.5	
9.4	44.3	41.0	

6481—6500

m	23h m s	−13° ′	
9.4	46 45.1	46.1	
9.9	47 22.8	3.2	
9.3	30.5	46.3	
10	30.8	27.4	
7.2	48 18.7	57.3	K
9.4	26.5	12.0	
7.8	34.1	17.3	Sj
10	39.3	33.0	
9.5	43.9	5.6	
8.3	49 39.0	46.1	K
9.5	47.8	59.9	
10	57.9	16.3	
9.8	50 26.4	56.4	
9.9	55.3	33.9	
8.3	51 7.5	16.2	Sj
8.7	26.9	35.4	K
9.8	28.3	29.9	
9.2	52 0.8	9.4	R
9.8	28.1	52.5	
9.1	30.2	44.4	K

6501—6506

m	23h m s	−13° ′	
9.7	52 49.9	43.8	
9.2	53 4.2	12.6	
9.1	15.7	44.0	
8.7	25.6	38.0	K
9.0	53.6	8.3	Sj
9.3	54 6.0	4.3	

6507—6511

m	23h m s	−13° ′	
9.3	54 30.7	21.6	Sj
9.8	34.6	41.7	
9.2	56 6.4	35.7	
10	12.4	16.0	
9.0	57 9.3	5.5	Sj

6512—6516

m	23h m s	−13° ′	
9.3	57 15.6	4.6	
9.4	30.4	32.1	
10	53.2	13.4	
9.8	58 11.2	50.4	
9.4	27.4	34.2	

6517—6521

m	23h m s	−13° ′	
9.5	58 38.0	34.8	
9.7	55.1	36.6	
9.4	59 6.3	40.1	
9.6	34.6	54.6	
9.6	44.7	11.3	

6445: neb GC 5000

Zone −14°

1—40				41—80				81—120				121—160				161—200			
	0h		−14°		0h		−14°		0h		−14°		0h		−14°		0h		−14°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.3	0	6.4	59.8	10	10	29.6	42.5	10	25	0.9	36.0	9.5	35	26.2	37.9	9.4	46	15.6	23.3	
10		19.0	28.6	6.5		32.7	15.6	K	9.9		6.8	21.8	9.7		33.0	2.8	7.3		27.1	42.3	L
10		34.2	50.4	10	11	0.6	57.6	8.0		24.3	17.2	K	9.5	36	54.7	57.1	9.8		30.2	59.8	
9.8	1	2.0	36.0	9.1		4.6	3.9	8.3		29.4	3.1	K	7.3	37	9.1	12.4	K	9.4	47	42.6	19.7	
8.8		33.9	16.8	9.3		31.1	44.3	9.4		51.3	32.5		9.8		24.8	49.2		9.9	48	9.7	40.2	
9.1	2	4.9	49.9	9.8		36.2	59.1	9.4	26	1.2	51.4		9.1	38	3.7	39.2		9.8		14.6	0.2	
8.5		11.1	58.9	Sj 9.3	12	11.8	8.7	10		4.7	52.8		9.3		6.4	0.8		9.8		37.3	1.2	
9.8		32.8	29.2	8.8		37.3	38.0	10		20.3	10.9		9.8		12.3	46.4		9.9	49	23.7	27.5	
8.8		51.6	26.8	M 8.5	13	25.3	26.4	K 10		21.9	24.5		9.2		22.8	40.9		10		41.7	39.2	
9.8		54.3	42.3	9.3	14	23.8	12.9	9.9	27	18.0	14.2		10		32.2	28.5		9.3		50.2	40.3	
8.5		58.0	47.7	K 9.5		39.0	6.9	9.3		30.3	38.1		9.8		55.3	23.2		9.0	50	18.6	40.9	
9.4		58.3	43.3	9.4		39.2	47.6	9.8		37.4	31.4		9.8	39	26.3	38.3		8.9		55.2	5[illegible].0	
9.3	3	1.1	32.0	9.8		48.3	4.4	10		44.8	25.5		8.3		26.8	32.1	K	8.5	51	30.7	55.9	K
9.3		21.3	44.8	9.8		48.7	18.0	9.8		52.4	23.6		8.6		53.7	54.0	K	8.4		35.5	26.8	
9.5		29.6	30.1	8.5		49.9	15.7	10		58.1	8.9		9.3	40	2.5	55.0		9.5		39.8	[illegible]8.2	
7.9		30.1	42.4	K 8.8	15	31.4	19.4	8.9	28	7.6	42.9		9.8		2.9	37.1		9.8		57.0	40.5	
8.9		46.5	19.6	9.8	16	1.9	32.2	9.9		8.8	53.5		9.5		16.2	1.9		9.9	52	0.5	8.5	
9.8		51.4	51.4	8.5		16.3	53.3	K 9.5		16.9	38.3		9.6		24.0	2.7		9.8		9.2	8.5	
6.8	4	39.6	37.3	K 8.8		20.8	58.2	K 9.7		25.1	40.9		9.2		25.8	54.3		9.8		19.8	39.6	
9.6		43.0	5.8	9.4		21.0	34.0	9.7	30	4.8	41.4		9.3		37.3	7.9		9.9		20.3	31.2	
9.1	5	2.6	19.2	10	17	25.2	16.9	9.3		31.0	30.0		9.7		41.8	18.6		9.6		21.3	45.9	
9.5		11.7	0.4	8.7	18	34.7	3.6	K 9.6		34.0	18.0		9.3	41	6.1	54.3		9.7		22.2	13.7	
7.8		12.9	25.0	K 9.5	19	1.6	32.5	9.8	31	13.5	9.4		9.3		27.3	59.2		10	53	5.3	28.5	
9.5		35.7	6.8	9.0		2.3	35.0	10		47.1	41.9		10		59.6	8.5		9.0		9.8	22.7	
9.3		42.5	51.7	9.5		6.5	31.4	8.9		49.4	3.0		5.3	42	8.4	20.7	K	9.8		28.3	6.2	
9.1	6	59.6	15.4	9.2		8.6	33.9	M 9.2		51.5	36.1		9.4		44.4	15.9		9.9		38.8	9.1	
9.4	7	1.5	8.0	8.0		16.8	49.7	K 8.9	32	12.4	24.7	K	10	43	6.5	32.7		8.8		44.8	25.9	
10		13.3	17.5	9.0	20	59.1	8.6	9.7		14.5	28.5		9.0		43.9	51.6	A	9.7	54	0.4	22.3	
7.0		24.7	58.8	B 9.8	21	3.1	37.4	9.6		42.6	28.9		10		56.5	17.0		9.8		10.1	18.7	
9.5		35.3	31.7	9.6		14.5	11.7	8.0		46.6	40.9	B	8.8	44	31.0	34.6	A	9.2		39.8	46.8	
9.3	8	13.2	24.7	8.5		55.7	21.4	K 9.6	33	3.0	41.5		10		32.6	13.4		8.0		40.7	54.9	K
8.7		41.5	51.9	M 9.1		57.7	48.5	9.8		3.5	6.1		9.0		51.4	0.8		8.8		50.3	7.0	
9.0		53.2	17.8	9.8	22	26.4	27.9	8.7		9.4	51.5	K	9.6		59.0	32.3		9.8	55	7.8	34.5	
9.8	9	10.4	46.4	9.3		27.9	25.7	9.9		19.2	46.1		7.8	45	2.4	41.6	K	10		27.7	26.0	
7.0		11.5	12.0	K 8.5	23	14.2	31.0	K 10		37.1	8.4		9.3		20.1	38.2		9.8		47.5	42.1	
9.4		11.7	17.1	9.4		20.9	16.5	10		50.8	9.6		9.8		44.5	10.1		10	56	7.4	35.5	
10		38.2	25.1	9.8		48.7	20.0	9.0	34	17.0	27.2		9.1	46	5.0	33.4		9.1		11.9	25.5	
9.1		50.5	54.8	10		50.8	32.9	9.8		27.1	12.0		9.1		7.1	59.0		9.8		39.5	44.4	
9.8	10	2.1	0.7	9.8		51.8	37.4	9.4		37.0	49.8		9.8		11.5	7.7		9.3		39.7	15.4	
10		16.2	24.5	8.3	24	38.6	6.8	M 9.5		52.1	54.6		9.7		12.0	14.7		10		50.0	34.8	

201—260					261—320					321—380					381—440					441—500				
	0h—1h		−14°			1h		−14°			1h		−14°			1h—2h		−14°			2h		−14°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.6	57	12.9	42.3		9.8	14	7.7	10.3		9.5	35	30.6	40.6		10	55	16.4	28.1		9.8	15	43.9	21.3	
10		28.4	7.0		9.5		29.0	36.0		10	36	0.4	47.5		9.3		38.5	24.8		8.8		58.0	25.2	
7.0		50.5	32.1	K	9.1		39.4	19.2		9.0		19.2	25.8		9.8		58.7	7.9		9.5	16	24.9	22.1	
10		59.8	20.7		9.8		40.3	9.0		9.5		24.5	53.3		9.6	57	6.8	16.2		8.9		41.4	46.0	
9.8	58	5.0	59.1		8.4	15	10.3	44.3		9.8		41.4	41.7		10		12.7	4.4		10		45.0	50.6	
9.5		22.7	1.6		9.4		28.3	13.9		9.0	37	3.6	55.8	A	8.0		30.2	30.3	K	9.6		48.5	28.2	
9.5		29.4	15.2		9.8		55.2	8.3		9.4		10.5	5.6		9.0		43.1	47.1		9.2	17	32.6	13.8	
10		46.5	30.3		9.0	16	1.7	52.1	K	8.4		46.9	33.6	K	9.7		46.9	13.8		9.9		55.5	44.4	
9.6		51.0	45.5		7.9		16.8	57.9	B	9.3	38	33.3	52.1		9.1	58	21.9	37.6		9.0	18	3.4	18.3	
10		58.1	17.6		8.5		20.7	41.4	K	9.5		55.1	10.5		9.5		33.3	58.5		9.9		10.2	3.2	
9.0	59	34.0	20.5		9.3		48.6	31.1		9.7	39	6.7	5.7		8.4		44.1	49.4	K	9.3		12.4	41.3	
8.6		43.5	54.1	K	10	17	27.9	13.9		9.1		21.1	50.8	A	9.2		50.2	52.3		9.4		40.9	13.8	
9.6	0	2.5	16.4		10		39.1	29.5		8.2		22.9	13.6	K	9.5	59	9.5	18.0		8.7		47.3	32.5	K
9.7		10.7	47.3		8.5	18	8.0	24.6	K	9.4		35.1	4.6		8.4		29.9	35.7	K	10		49.0	37.1	
9.7		15.6	40.4		9.5		17.7	44.5		6.8		53.5	36.8	K	9.3	0	23.0	41.8		8.8	19	29.2	32.0	
8.2		27.5	56.7	K	8.2		28.9	8.7	K	9.2	40	59.2	55.9	A	9.5		33.1	32.8		10	20	17.4	37.5	
10		42.6	41.0		9.5	19	0.6	41.6		8.2	42	36.3	57.0	K	9.3		37.3	34.5		9.3		22.7	46.5	
9.2		53.1	1.0		9.5		1.5	23.9		9.6		51.2	30.2		8.5		58.9	56.5	K	9.5		33.8	9.8	
8.7		58.5	1.7	K	9.5		1.5	0.4		8.2	43	1.0	25.1	B	9.3	1	3.2	28.5		8.6		43.6	19.6	
9.8	1	8.6	17.8		9.7		5.2	40.2		9.8		43.6	30.7		9.5		14.2	10.2		9.8		50.9	37.7	
9.9		57.2	26.2		8.0		8.3	38.6	K	9.3		46.9	10.0		9.5	3	5.0	56.1		9.7	21	10.6	41.5	
9.8	2	51.2	50.8		10		29.5	42.3		9.0	44	19.3	9.9		8.8		5.5	8.6		9.5		19.3	31.4	
8.6		51.6	47.4		9.6	20	0.3	4.3		8.5		21.9	22.2	R	9.8	4	50.9	9.0		8.3		22.4	51.2	A
9.4	3	34.7	48.6		9.0		34.6	19.1		9.1		37.9	16.2		9.1	5	1.6	38.9		9.8		40.1	17.8	
6.8	4	5.7	16.2	K	8.8	21	36.1	22.9		9.1		48.9	5.9		9.4		6.2	18.6		9.4	22	4.7	26.9	
10		37.3	39.9		8.5		48.4	46.9		8.9	45	4.2	47.6	K	9.5		17.5	11.7		9.3		6.9	10.8	
9.1		40.1	27.8	K	9.6		49.3	2.5		9.8		24.0	17.8		9.5		50.6	59.7		10		52.9	45.5	
8.3		53.7	23.8	K	9.2	22	5.2	20.3		10		32.9	12.7		9.3	6	6.1	48.5		8.2	23	0.5	37.3	
10	5	29.2	14.9		9.5		45.0	58.1		10		58.0	27.4		9.3		11.1	38.2		9.5		4.8	34.0	
10		35.2	15.1		8.5	23	23.0	49.4	K	9.6	46	13.0	2.9		9.5	7	49.8	32.4		9.2	24	12.9	56.2	
8.9		42.5	47.9		10		31.9	44.1		9.8		14.5	7.2		9.5	8	10.0	5.5		9.1		24.1	55.3	
9.7		47.7	42.2		9.0		37.5	54.9		9.1		25.8	35.5		9.8		11.8	51.1		9.2		38.6	18.2	
8.7		53.9	43.8	K	10	24	17.4	30.6		9.4		54.7	7.5		9.4		21.8	52.3		9.4	25	26.1	38.9	
10	6	26.3	26.4		8.5		27.3	26.0	K	9.0		56.6	55.5		9.6		31.7	19.0		9.3		42.1	42.0	
7.0		49.1	14.6	K	9.5		52.1	58.5		8.8	47	33.3	23.2		9.1	9	6.1	5.7		9.7	26	2.4	58.3	
10	7	3.7	0.6		9.5	26	18.5	57.1		8.3		34.6	37.9	K	9.8		9.3	53.9		9.3		57.1	40.6	
10		22.7	42.5		9.3		19.8	58.5		9.2		54.1	5.8		10	10	1.6	5.2		9.2		59.4	41.3	
9.1		39.2	31.1		9.0	27	56.6	38.4		8.5	48	15.8	49.2	K	9.6		2.5	9.9		7.7	27	7.0	48.5	
9.4	8	0.5	4.3		7.3	28	16.7	7.4	K	9.7		17.5	58.3		8.6		6.3	53.4		8.9		15.3	9.5	
8.7		10.9	40.2	K	9.7		23.0	41.3		9.5		49.2	20.4		9.5		10.2	45.5		9.5		27.2	59.5	
9.8		14.3	16.8		10		46.2	7.9		9.5	49	3.6	41.6		9.1		35.2	42.8		8.3		28.5	26.2	
9.5		29.4	46.5		9.1		57.9	19.7		9.5		30.8	35.6		9.8		54.4	3.5		9.1		33.9	43.9	
10		45.7	18.2		9.2	29	39.9	4.7		8.9		33.9	53.6		7.2	11	10.0	48.3	K	9.8	28	9.3	23.2	
8.4	9	15.7	18.9		9.2		39.9	49.4		8.7	50	1.6	50.4		9.0		52.1	55.1	A	9.8		16.4	24.4	
9.3		27.7	44.9		9.2		47.5	25.5		9.2		13.0	1.8		9.8	12	4.1	4.1		8.5		20.5	27.2	
9.5		50.2	19.5		9.5	30	10.4	14.1		9.0		58.6	59.6		8.8		12.7	58.5	K	9.1		24.1	36.1	
9.8		50.5	40.4		9.3		45.3	54.2		9.8	51	1.4	26.1		9.8		29.7	0.7		10		45.4	26.3	
9.0		52.3	57.3	K	9.8		52.3	7.2		9.0		20.8	44.5		9.5	13	15.0	33.5		9.4	29	15.1	10.4	
9.9	10	0.6	2.2		10	31	17.3	48.7		9.1		33.2	38.3		9.4		25.7	0.2		10		30.4	27.4	
10		7.7	1.8		9.4		56.9	9.4		9.4	52	17.1	2.6		9.2		58.2	54.5		9.3		34.9	39.7	
9.8		26.3	28.0		8.4		57.0	39.4	R	7.0		28.3	34.3	K	9.8	14	2.9	26.1		9.2		56.3	3.7	
7.8	11	32.1	9.5	K	8.9	32	27.2	16.9		8.3		43.8	1.5	L	10		23.3	52.6		9.5	30	35.1	56.4	
9.4		36.9	17.3		9.4		58.9	31.2		7.8	53	2.5	15.1	K	10		36.5	40.5		9.4		40.2	38.0	
9.3	12	20.2	5.9		9.4	33	5.9	11.0		9.6		16.8	33.2		7.0		52.0	56.9	K	9.1	31	17.8	37.4	
8.9		35.0	2.7		9.2		15.0	48.0		10		20.5	22.0		10		56.8	56.0		9.0		39.4	56.0	K
9.8	13	7.6	51.9		9.5		24.3	41.5		10		39.7	31.9		9.4		59.0	3.2		8.7	32	4.3	14.8	
9.2		24.2	6.2		9.8	34	3.7	24.1		10	54	3.2	34.8		9.4	15	6.3	15.7		7.8		29.8	54.4	K
7.0		30.8	39.0	K	9.1		47.9	43.9		8.8		52.5	42.8		9.5		12.0	48.3		8.9		56.3	54.1	A
9.5		34.2	59.8		9.2	35	26.9	52.7		9.1		59.3	2.2		9.3		19.7	10.3		9.5	33	4.1	6.2	
9.0		45.1	5.0		9.5		28.3	11.6		9.3	55	1.9	2.0		8.5		30.8	5.2	K	9.4		7.2	12.7	

349: neb GC 431

501—560

	2h		−14°	
m	m	s	′	
9.9	33	19.2	3.0	
9.8		22.4	39.1	
9.1		39.9	18.4	
9.8		42.1	30.8	
9.9		55.3	29.7	
9.8		58.0	19.5	
8.5	34	33.2	7.9	
8.5		51.4	13.9	K
9.8	35	7.1	53.1	
9.9		8.1	41.2	
9.5		11.1	6.3	
8.8		29.4	17.4	
10		51.2	27.5	
9.4	36	0.1	5.4	
9.9		14.7	41.0	
9.5		23.4	14.5	
9.3	37	4.7	48.6	
9.5		7.3	12.3	
4.0		12.9	28.0	K
9.3		33.4	5.4	
8.7		36.7	17.9	K
9.7		56.8	24.4	
8.6	38	1.3	12.7	K
8.3		33.1	36.4	
9.2		48.7	33.2	
9.3		59.8	5.4	
7.7	39	41.5	35.2	K
10		50.8	38.9	
9.0	40	6.5	34.1	
9.3		22.5	59.8	
9.1		24.7	51.9	A
10		33.6	10.0	
9.1	41	10.9	50.1	A
10		13.5	47.1	
9.4		30.3	23.6	
9.3		31.7	14.2	
9.5		34.6	42.4	
9.2	42	22.4	38.4	
9.3		37.2	2.1	
9.8		45.5	53.2	
7.5	43	4.4	27.2	K
9.8		6.6	3.3	
9.0		9.3	18.1	
9.4		25.2	30.6	
9.3		46.4	48.7	
9.6	44	5.1	12.3	
10		18.2	29.6	
10	45	26.5	57.6	
9.8		31.7	48.3	
9.2		34.5	43.0	
9.0		40.2	44.8	K
10		59.9	35.5	
9.5	46	21.1	39.5	
9.9		23.4	35.8	
9.0		36.9	51.0	K
9.1	47	59.3	35.8	
6.8	48	1.8	36.9	K
9.7		8.4	7.9	
9.2		17.8	15.0	
9.1		24.8	0.4	

561—620

	2h—3h		−14°	
m	m	s	′	
9.3	48	33.0	49.9	
9.4		44.1	40.9	
10		46.8	47.2	
7.9	49	1.2	17.2	K
9.4		25.2	51.5	
9.3		50.9	5.1	
9.2		55.2	5.0	
10	50	20.1	15.2	
9.4		37.6	40.0	
9.4	51	32.7	3.5	
9.3		41.5	3.0	
9.7		57.5	3.8	
9.4	52	5.4	0.2	
9.5		25.6	27.5	
9.8		43.4	26.9	
6.9	53	3.2	15.8	K
9.5		34.4	39.1	
9.6		35.3	10.3	
9.9		51.7	45.3	
9.3		53.6	20.3	
9.8	54	10.6	50.3	
9.6		22.3	1.2	
9.5		31.1	44.2	
9.1		35.6	43.9	
10		42.2	13.0	
9.1		44.3	27.7	
9.1		49.2	10.1	
9.5		54.1	38.7	
8.6	55	32.2	50.0	
9.5		32.5	12.7	
7.8		35.7	6.1	K
9.8		37.4	54.4	
8.9		59.0	58.9	A
9.5	56	12.8	17.5	
9.7		21.1	29.7	
9.1		59.0	48.1	
9.1	57	20.3	9.6	
8.2	58	15.2	57.9	B
9.0		33.7	54.8	A
9.2	59	9.5	5.3	
7.6		12.3	0.2	Sj
10		27.9	36.8	
9.8		42.6	22.0	
6.5	0	27.5	18.8	B
9.3		59.3	31.5	
9.3	1	47.3	51.5	
9.7	2	12.3	0.7	
9.6		43.1	50.3	
9.8		44.9	36.5	
9.1	3	20.7	24.8	
8.0		49.8	57.8	B
8.9	4	1.9	7.2	K
9.7		21.0	38.0	
9.5		22.5	10.5	
9.4		27.1	17.1	
9.7		28.2	30.0	
7.7		40.1	4.5	K
10		57.6	16.7	
9.8	5	4.4	32.4	
8.7		16.4	47.4	K

621—680

	3h		−14°	
m	m	s	′	
9.4	5	48.6	16.3	
9.2	6	20.3	44.0	
9.8		22.8	25.0	
9.5		30.4	42.7	
7.5		47.1	11.2	Sj
9.8	7	13.9	22.2	
7.5	8	1.8	59.0	B
9.3		5.0	32.3	
7.2		15.4	22.1	K
8.4		27.5	2.2	
9.8		56.5	30.6	
8.7	9	6.1	41.3	K
9.8		10.1	0.0	
9.8	10	19.8	16.0	
9.7		27.8	29.3	
9.8		30.4	1.1	
9.3		34.2	11.0	K
9.2		34.7	14.3	K
9.0		56.2	38.9	
9.7	11	19.9	24.0	
8.2		25.4	21.9	K
9.3		26.0	12.3	
9.0		35.9	24.4	K
10		38.3	39.3	
9.5		41.7	11.0	
7.5		53.3	46.9	K
9.8	12	42.3	3.1	
8.3	13	18.9	40.1	K
9.7		27.4	3.5	
9.4		28.2	31.0	
9.4		37.3	46.9	
9.3	14	26.1	30.3	
8.8	15	50.8	17.8	K
9.5		55.5	25.1	
9.5	16	1.5	7.7	
9.8		2.0	50.9	
7.4		40.4	44.4	K
8.8	17	14.9	37.0	K
9.5		20.2	24.6	
9.1		28.0	52.8	
6.3		36.8	30.7	Sj
9.8		59.5	31.6	
8.5	18	7.2	4.8	
9.8		12.5	12.0	
7.9		13.0	38.0	K
9.8		44.9	21.7	
9.4	19	28.7	11.2	
9.6		35.9	14.5	
8.9		37.4	39.4	
9.4		44.2	51.9	
10		50.8	9.6	
9.7		52.1	46.4	
9.5		54.0	54.1	
10		58.0	21.3	
9.1	20	2.1	54.8	K
10		33.2	28.0	
6.8		55.2	52.3	B
9.5	21	10.0	56.9	
10		17.6	20.3	
10	22	3.4	40.9	

681—740

	3h		−14°	
m	m	s	′	
9.5	22	27.7	54.1	
8.9		59.2	55.8	
9.5	23	0.3	58.0	
9.5		9.4	13.1	
9.8		14.2	48.0	
9.9		19.4	38.5	
9.5		31.4	36.7	
9.0	24	22.6	50.8	B
9.1		28.9	36.6	
10	25	52.1	12.5	
9.3	26	13.7	8.8	B
9.3		14.9	50.3	
9.5		20.8	54.2	
9.1		24.1	44.6	
9.7		27.7	43.9	
8.8		36.3	6.1	K
8.8		45.4	57.8	
9.8	27	8.3	43.1	
8.7		20.5	19.5	L
10		25.4	6.1	
10		47.2	28.4	
10	28	18.5	9.1	
9.0	29	52.4	3.8	K
9.1		53.3	41.0	
9.3	30	0.1	9.8	
7.8		1.6	35.2	Sj
9.4		6.3	0.8	
8.9		18.9	24.8	
9.8		37.4	42.5	
9.9		58.5	57.9	
8.2	31	4.4	26.8	K
9.7		18.0	31.8	
9.3		27.5	27.2	
9.1		29.7	37.0	
9.0		49.0	28.5	K
10	32	6.1	31.6	
9.6		10.5	58.0	
9.5		55.3	23.6	
10	33	6.2	6.3	
9.4		13.1	45.6	
9.0	34	1.5	24.2	
9.2		5.9	50.5	
9.8		15.2	11.2	
9.8		29.2	50.9	
9.1		31.0	53.0	
8.9		32.1	27.9	
9.5		41.9	22.8	
9.8		43.3	4.0	
7.2		49.5	46.0	B
9.8		52.5	20.0	
9.8	35	0.3	12.1	
7.2		9.6	50.1	B
9.5		46.2	6.5	
9.5	36	0.2	9.7	
9.3		27.6	6.5	
9.5		37.9	19.2	
9.7	37	2.0	4.0	
9.0		16.7	33.5	
10		59.6	47.4	
9.5	38	3.3	43.8	

741—800

	3h		−14°	
m	m	s	′	
9.0	38	29.7	58.3	K
9.9		30.0	6.6	
10		30.6	18.8	
10		34.9	26.3	
9.6	39	14.2	55.7	
9.4		19.4	35.5	
9.9		24.1	38.0	
9.1	40	0.5	15.8	
7.3		12.7	55.9	B
9.9		26.0	30.7	
9.7		59.0	45.2	
9.1	41	44.1	6.3	K
9.7		44.9	2.9	
9.2	42	4.2	19.5	
9.4		14.5	38.9	
9.3		57.7	41.6	
8.8		59.1	19.7	Sj
9.8	43	46.6	22.1	
10	44	4.1	14.5	
10		16.3	6.3	
9.7		35.4	43.8	
9.3	45	3.0	12.0	
9.0		7.8	1.4	
9.6		29.7	0.8	
8.0		31.6	18.0	Sj
8.8	46	10.4	33.0	
8.3		18.6	6.2	K
9.3		29.9	30.3	
9.0		56.2	21.5	
9.3		58.4	26.7	
9.5	47	8.0	8.6	
8.0		12.9	26.0	
9.7		14.4	50.5	
10		45.9	12.4	
9.2		47.1	15.0	K
9.5		52.0	34.9	
9.5	48	4.3	47.6	
9.1		14.3	53.2	
9.5		18.9	28.4	
9.0		49.9	31.3	
8.5	49	24.7	11.4	K
9.0		28.8	21.3	K
6.8		42.6	1.2	K
9.7		51.2	39.2	
10	50	8.8	44.9	
8.7		21.3	3.1	K
9.3		22.4	0.7	K
9.4		53.1	35.6	
9.4		54.3	3.9	
10		56.7	37.8	
10	51	20.4	13.0	
9.5	52	53.6	27.4	
10	53	1.7	6.4	
10		28.8	50.6	
9.8		29.4	46.6	
9.8		37.6	26.2	
9.0		40.3	3.2	
9.1		43.5	56.4	
10	54	18.8	2.8	
9.7		32.6	28.2	

801—860				861—920				921—980				981—1040				1041—1100			
	3h—4h	−14°			4h	−14°			4h	−14°			4h	−14°			4h—5h	−14°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.1	54 39.6	28.2		10	11 10.3	10.5		9.8	24 59.1	24.7		7.8	44 58.9	50.1	K	9.8	59 26.9	54.0	
9.8	44.2	15.8		9.8	25.4	51.6		9.1	25 33.8	44.8		10	45 53.0	32.5		9.7	31.7	47.7	
9.1	53.9	13.7	K	9.5	29.5	20.2		9.0	26 7.2	7.9		10	46 1.6	49.6		9.8	34.9	7.1	
9.5	58.0	22.4		9.4	34.0	43.4		9.8	22.1	0.2		10	42.2	2.7		10	43.9	13.7	
9.9	55 4.0	48.6		9.5	35.0	38.7		9.3	27 11.0	4.8		9.1	51.4	29.3		7.1	46.0	53.8	K
10	29.5	1.1		6.8	35.1	59.7	K	9.8	29 3.2	55.0		9.8	47 2.6	49.8		8.8	0 6.6	38.7	
9.5	47.5	53.0		9.5	12 0.9	58.3	A	9.1	12.6	4.5		9.4	22.5	4.7		9.7	13.7	20.4	
9.8	56 12.8	6.5		9.8	6.3	29.7		9.8	51.0	17.7		8.5	24.8	42.3	A	10	26.8	24.9	
10	33.0	48.3		9.2	7.0	49.9	A	8.7	55.4	57.0	K	9.1	31.7	21.2		10	30.8	25.8	
8.9	57 31.9	14.8	K	9.8	23.6	31.7		9.3	30 1.9	43.3		8.5	32.8	35.0	A	8.3	48.7	45.0	A
9.9	33.8	34.6		9.5	59.9	55.9		8.3	27.8	24.7	K	10	48 11.4	39.3		7.5	57.6	10.5	Sj
8.0	36.9	40.0	L	7.7	13 13.4	56.4	A	9.6	31 16.6	47.8		9.1	13.3	22.2		9.2	1 37.8	27.1	
9.0	58 1.4	39.1	K	9.4	28.5	9.1		4.0	32.3	35.5	A	9.2	33.8	43.2		10	2 5.5	0.6	
9.5	50.6	19.1		9.3	51.2	35.5		9.5	42.5	23.2		8.3	42.8	58.4	K	9.3	22.1	5.5	
10	57.1	10.4		8.5	14 2.7	34.4	K	9.3	32 29.5	40.5		9.8	49 3.0	40.6		8.3	32.4	55.2	A
9.3	58.2	26.0	K	10	4.0	57.3		6.5	39.2	38.5	K	9.0	11.2	15.8		9.7	54.8	23.0	
9.9	59 9.7	49.7		9.8	18.6	35.9		8.4	58.2	52.9	B	9.4	34.2	44.1		10	3 1.7	41.4	
8.8	10.6	24.8	K	9.5	22.9	27.0		9.3	33 10.9	28.7		9.8	58.7	50.6		9.5	7.8	22.0	
9.8	17.7	29.7		9.8	24.6	49.9		9.3	49.7	36.2		9.5	53.9	41.0		9.8	16.7	41.7	
9.1	57.2	47.7	Sj	9.5	39.2	15.8		9.5	58.9	26.2		9.4	50 26.1	10.9		9.8	18.4	2.1	
9.8	58.0	27.0		7.5	49.4	37.5	K	9.6	34 25.2	46.9		9.3	41.4	19.7		9.5	44.9	31.3	
9.4	0 23.8	9.5		9.1	54.5	58.3	K	8.5	35.3	13.1	K	8.8	58.5	39.9		9.3	4 0.9	31.8	
10	40.4	3.6		9.8	55.1	40.0		7.7	56.9	58.2	B	6.3	51 6.5	27.4	L	9.5	3.8	25.6	
9.8	50.1	56.3		8.5	15 2.4	52.5	K	9.6	35 15.7	44.9		8.8	33.5	27.6		9.1	5.7	3.4	Sj
9.8	57.2	22.6		7.8	8.3	13.5	L	9.6	19.0	55.1		8.7	36.6	40.6		10	41.7	19.7	
9.5	1 45.3	30.9		9.7	29.2	36.3		9.5	45.5	52.6		9.9	49.6	45.9		9.5	58.6	6.3	
9.9	2 5.5	44.4		9.1	29.4	13.4		9.8	36 14.3	7.3		9.8	52 33.4	18.4		8.8	5 21.7	15.7	K
10	43.2	23.9		9.8	29.5	56.1		9.8	24.4	3.0		9.1	34.3	32.9		9.2	30.9	33.5	
9.8	3 8.9	7.0		9.3	42.9	15.9		9.5	32.1	21.2		9.4	43.8	56.0		9.9	47.2	20.2	
9.3	43.0	8.5		9.5	16 8.2	43.8		9.3	37 0.3	30.1		9.8	55.9	6.8		8.9	6 16.8	44.4	K
10	4 2.4	21.0		9.9	17 0.3	7.0		8.3	18.0	43.5	Sj	9.1	56.6	43.6		9.0	41.9	36.2	Sj
7.7	15.2	44.8	K	8.4	3.7	21.3	K	9.1	49.4	7.8		10	53 36.9	20.8		9.3	53.8	47.4	
9.1	52.7	55.8	K	8.2	10.0	21.3	K	9.4	38 17.1	17.8		9.4	39.8	58.2		9.0	55.9	48.3	K
8.8	53.6	47.6	K	10	17.1	24.9		9.5	20.0	15.5		9.4	54 15.3	57.4		6.0	7 24.3	46.5	K
10	5 8.9	10.7		9.8	23.6	27.3		9.5	25.6	19.3		9.8	18.2	39.6		9.5	46.8	29.9	
10	16.7	14.7		9.5	42.7	18.9		9.2	32.5	18.2		8.6	48.4	21.7	K	8.5	56.3	5.6	K
8.0	27.4	0.5	K	8.9	50.6	57.1	A	9.3	43.9	10.6		9.4	59.6	7.6		10	8 25.6	7.5	
9.5	39.8	2.9		9.5	18 42.3	26.3		8.7	39 10.5	44.3		10	55 31.3	5.8		9.5	26.8	25.4	
9.8	6 11.5	30.3		9.3	52.8	13.2		10	35.2	25.7		8.8	34.4	15.7		9.7	9 1.8	25.4	
8.3	24.6	41.6	Sj	9.5	53.8	34.1		10	53.4	9.9		10	46.8	13.4		7.8	24.2	40.1	Sj
9.4	28.9	45.0		9.0	19 53.6	34.2	K	9.9	40 27.7	35.1		9.3	49.1	30.6		9.3	42.6	6.2	
9.8	47.2	17.3		9.6	20 2.5	10.7		9.8	43.9	36.7		9.1	56 19.0	41.0	A	9.5	50.9	32.6	
9.5	7 0.4	53.2		8.1	7.7	56.7	B	9.4	41 3.8	2.2		9.1	23.7	34.1		9.0	52.7	20.5	K
8.5	31.7	15.1	K	10	38.5	11.0		9.8	42 11.0	21.4		9.8	57 2.9	4.3		9.1	53.5	1.8	
9.4	54.3	23.4		9.9	46.8	58.3		9.8	11.5	49.8		8.5	6.8	50.4	K	10	10 21.3	6.1	
8.6	8 2.8	31.3	K	10	21 19.2	51.0		9.8	24.3	8.9		9.5	12.4	18.0		9.5	23.3	51.7	
9.1	14.8	5.2		8.9	37.3	18.0		9.7	33.6	54.1		6.5	13.7	34.8	K	10	34.2	3.4	
8.7	17.7	46.6	K	10	57.4	41.8		10	50.3	26.1		9.0	18.8	44.5	A	9.8	36.2	7.2	
9.7	47.4	2.1		9.1	22 16.1	12.8		9.8	56.4	27.6		7.0	19.8	45.8	K	10	38.4	10.5	
10	9 3.9	54.3		9.4	22.4	46.1		6.5	43 2.9	0.9	L	8.8	28.2	2.2		10	11 6.4	53.3	
9.8	34.3	47.9		9.5	30.9	59.3		9.4	17.5	5.0		9.2	30.1	19.7		9.5	21.9	32.5	
9.8	34.5	30.0		9.1	41.3	37.1		10	24.7	21.5		9.3	41.4	17.0		10	49.3	0.7	
9.8	36.7	58.0		8.2	41.8	22.5		9.2	30.2	3.9		9.0	58 12.4	19.1		8.9	12 3.2	10.3	K
8.4	39.7	17.5	Sj	9.2	42.3	46.7		9.6	41.8	2.7		9.1	13.8	42.5	A	8.3	51.2	55.4	Sj
9.6	53.5	9.1		9.2	23 0.6	8.8		9.3	52.9	47.4		8.0	19.0	25.3	L	9.1	13 3.1	4.8	
9.7	10 38.7	5.2		8.7	8.4	22.2		9.5	44 22.9	16.8		10	30.4	17.8		9.2	29.7	7.8	
10	39.3	9.7		9.7	30.2	15.0		9.5	23.1	50.9		10	59 5.7	22.8		10	37.9	59.2	
9.8	43.8	11.0		9.3	38.1	8.5		9.6	29.1	20.9		10	10.2	16.2		9.3	53.1	45.4	
10	44.7	8.5		9.5	24 8.7	40.6		9.6	31.7	57.0		8.5	11.9	59.0	K	9.0	55.9	44.0	K
9.7	50.5	21.2		9.2	53.2	4.2		9.5	53.4	29.6		8.0	15.8	6.9	K	9.2	14 16.3	14.5	

1101—1160				1161—1220				1221—1280				1281—1340				1341—1400			
	5h	—14°			5h	—14°			5h	—14°			5h—6h	—14°			6h	—14°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.4	14 21.5	48.5		9.8	25 28.5	53.7		8.8	37 11.2	44.2	K	10	49 31.0	3.4		8.5	1 17.8	14.3	Sj
8.6	22.1	06.6	K	10	38.3	59.7		9.5	12.0	28.3		10	31.9	19.0		10	28.2	39.3	
8.0	35.8	17.6	K	9.5	26 0.7	7.1		9.5	29.1	32.0		9.6	32.3	57.0		10	47.7	31.2	
9.0	44.4	27.5		9.5	10.9	22.1		8.0	31.1	34.7	K	9.9	41.5	6.0		9.8	2 12.5	57.1	
7.8	44.9	42.2	K	9.9	12.5	55.0		9.3	33.4	58.9		10	47.6	40.1		10	19.1	36.2	
9.3	48.9	21.7		10	20.7	3.4		9.8	38 0.1	41.4		4.0	47.7	12.0	K	9.0	30.3	48.4	K
8.6	15 15.5	1.2	K	9.4	30.0	46.8		10	45.8	3.8		9.3	50.2	38.8		8.2	33.5	2.6	K
9.6	16.9	46.4		9.8	27 0.2	2.3		8.7	39 6.8	50.2	K	9.6	56.4	54.4		7.0	59.1	33.5	K
9.1	23.1	43.5		10	12.1	41.5		9.4	43.2	46.7		10	50 23.0	27.7		10	3 5.4	4.1	
9.3	32.5	11.8		8.7	19.8	54.3	A	9.5	52.2	38.5		9.6	31.4	56.4		9.5	19.1	31.3	K
9.8	43.4	50.2		9.3	27.9	27.8		9.4	40 1.0	28.7		9.6	36.9	0.7		10	22.8	14.8	
9.5	43.8	12.7		10	42.7	1.9		4.0	22.3	52.7	B	8.0	51 10.7	13.3	M	9.4	28.5	59.6	
9.4	45.0	32.3		10	56.6	59.6		8.5	28.1	31.9	K	9.8	16.0	2.7		9.3	38.1	31.7	K
10	16 8.0	20.7		9.7	58.7	11.3		9.5	43.4	56.7		10	17.7	4.8		9.8	53.3	48.4	
9.4	10.1	3.2		10	28 10.9	27.8		9.3	48.0	23.9		10	59.9	19.5		10	55.0	19.6	
9.5	33.8	14.8		10	41.7	5.1		9.2	54.2	45.3		10	52 0.9	18.2		9.8	4 4.2	41.0	
8.2	44.1	58.5	B	8.9	42.5	48.0		9.3	55.7	57.1		8.5	14.8	12.8	K	9.6	10.3	46.7	
9.5	49.6	1.9		9.5	43.7	46.4		9.3	41 0.2	44.8		10	41.0	20.4		9.8	18.1	5.2	
5.8	52.2	3.7	K	9.5	58.8	17.2		9.5	3.9	55.3		9.5	59.1	34.2		8.2	5 16.5	25.3	K
9.8	54.9	49.3		9.2	29 21.0	29.1		9.3	5.5	28.7		8.5	53 7.2	43.1	K	9.3	20.2	39.0	
9.4	17 32.6	1.0	K	9.7	38.6	47.3		9.5	20.8	8.2		9.5	34.1	30.8		9.3	39.8	37.4	
10	46.0	34.5		9.5	49.1	43.9		9.3	24.2	38.6		8.6	38.7	11.3	B	9.8	40.2	12.4	
9.8	18 20.4	42.8		9.5	30 0.7	4.1		7.0	42 5.0	21.5	L	9.5	40.9	50.5		9.3	6 3.9	32.1	
8.5	24.9	24.7	M	10	9.1	41.7		9.8	9.2	44.3		9.0	45.2	1.7	K	9.6	11.0	54.9	
9.4	38.5	59.3		9.7	29.0	41.0		9.2	10.8	2.3		9.4	54 17.1	34.2		9.8	14.6	11.0	
8.0	53.8	15.6	K	9.2	43.8	58.2		10	23.8	9.0		9.5	24.1	33.2		9.3	51.8	28.4	
9.8	56.0	56.6		8.6	49.7	55.7	K	9.5	31.8	9.4		9.0	29.5	31.4	M	9.1	56.2	0.2	
9.0	19 1.0	33.9		9.3	31 13.8	17.5		9.4	34.7	46.2		9.3	31.4	17.8		9.3	7 9.5	54.2	
9.3	5.0	36.6		9.5	16.8	17.9		9.5	37.8	9.9		10	53.0	21.6		9.8	29.8	29.2	
7.5	7.7	9.4	K	8.5	30.3	50.7	B	10	55.8	9.5		9.1	55 15.2	6.2		9.6	42.1	8.0	
9.0	16.9	40.8	Sj	8.0	40.0	25.9	K	5.5	43 1.1	31.4	K	10	20.8	13.5		9.8	59.4	44.1	
8.5	44.2	3.6	L	9.5	47.1	36.2		9.2	22.2	39.1	K	10	33.7	45.0		9.5	8 5.0	54.6	
8.0	48.7	10.7	L	10	56.1	32.2		9.4	25.7	46.3		10	50.1	35.4		9.8	31.2	36.0	
8.7	20 19.9	25.0		10	57.3	52.0		10	43.1	32.6		9.2	57.8	47.9		10	32.1	9.1	
9.5	37.0	37.0		9.0	32 4.9	17.4	K	9.2	49.2	40.4		7.0	58.7	30.0	L	9.5	47.0	59.9	
8.8	41.4	49.1		9.8	13.9	58.1		9.3	44 2.1	32.7		9.7	56 26.8	40.1		9.7	54.5	54.0	
9.5	49.4	24.1		10	16.9	14.2		9.0	6.9	13.9		10	29.0	25.2		9.8	9 1.4	21.2	
10	21 1.6	58.2		9.5	43.7	1.3		9.5	23.1	41.0		9.4	49.3	45.2		9.5	3.6	59.1	
10	6.7	8.9		10	33 2.0	40.5		9.0	31.8	8.5		9.4	57 2.9	52.8		9.0	19.9	23.1	K
10	12.9	9.3		10	6.5	40.5		9.7	44.1	37.9		9.7	12.8	46.7		9.7	22.7	1.4	
9.0	22.0	53.8		9.0	23.8	56.6	A	8.9	53.2	40.0		9.7	26.4	49.3		10	31.6	36.3	
10	33.3	58.5		9.5	37.0	25.4		8.9	45 6.5	57.7	M	7.8	35.5	4.8	K	9.5	31.8	0.7	
9.5	40.0	35.2		9.5	39.9	18.7		9.3	12.1	31.7		9.1	49.9	49.0	WC	10	42.6	16.7	
9.5	50.7	11.1		9.2	45.7	49.0		9.5	36.9	11.2		8.2	58.4	1.6	K	9.8	49.5	17.4	
9.5	22 15.2	50.2		9.8	46.2	1.5		9.8	39.4	55.0		9.5	58 16.9	21.9		9.7	52.6	59.4	
9.0	31.8	16.1		9.5	34 5.0	2.9		8.5	42.3	49.8	K	8.5	17.2	6.7	K	9.5	10 9.6	18.6	
10	37.0	34.3		9.3	40.0	20.6		8.0	57.1	36.2	K	9.4	17.7	46.8		9.2	40.0	27.0	K
9.8	39.3	49.0		9.0	46.0	27.6		9.8	46 6.7	1.2		8.7	33.8	17.9	K	9.6	40.3	57.1	
9.4	50.8	48.6		9.3	49.8	52.8		9.4	7.3	4.5		10	57.8	15.2		9.5	44.9	6.5	
9.8	57.7	58.1		9.0	35 12.8	7.0		9.8	36.0	59.3		9.4	59 4.4	0.0		9.5	11 3.1	35.0	
10	58.5	31.0		9.0	38.9	15.5		9.5	43.9	12.5		5.0	35.0	55.2	B	9.3	12.5	39.4	
10	23 33.9	26.1		9.5	50.4	44.5		7.5	47 22.3	9.4	K	10	55.8	13.8		9.8	28.2	39.5	
10	39.4	10.8		10	59.1	31.1		9.7	31.1	57.6		9.8	0 33.2	0.0		9.0	28.7	9.6	
9.4	45.7	6.1		9.5	36 1.3	53.5		9.3	32.3	12.1		9.5	43.0	28.2		10	25.9	9.7	
9.3	24 0.9	28.4		9.1	16.9	58.8		9.6	48 7.5	5.4		9.5	48.3	50.8		9.0	37.2	16.4	K
9.2	6.2	7.8	M	9.2	20.8	47.7	K	10	30.3	44.7		9.4	51.0	0.1		8.2	55.1	32.6	K
10	22.6	0.3		9.2	29.1	45.6	K	9.1	32.9	0.7	K	9.6	56.1	5.3		8.6	58.7	18.3	K
9.5	48.0	30.2		9.5	29.5	24.5		9.8	41.2	46.3		9.9	56.7	19.2		9.0	12 8.0	52.3	
10	25 10.8	15.5		10	30.0	54.1		10	47.0	29.8		10	1 4.6	22.8		8.3	13.4	47.2	L
9.0	14.0	29.8	K	9.6	45.7	0.9		9.5	49 31.0	26.2		9.8	11.9	10.3		6.5	15.5	58.3	B

1401—1460				1461—1520				1521—1580				1581—1640				1641—1700			
6h		−14°		6h		−14°		6h		−14°		6h		−14°		6h		−14°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	12 46.1	7.5		9.1	22 2.8	45.5		9.8	32 2.2	43.4		10	40 3.0	3.1		9.8	48 49.7	14.8	
9.1	52.2	16.6	K	9.3	3.0	2.1	K	10	7.9	27.5		9.7	6.0	55.3		9.8	49 1.6	10.4	
8.9	55.6	36.5	K	9.4	15.4	2.0		8.8	18.5	42.9		9.5	11.1	41.7		9.3	5.1	37.4	K
9.4	13 4.9	53.5		9.8	18.2	9.9		8.3	28.5	25.6		6.2	14.7	16.2	K	9.5	10.7	17.2	K
9.8	6.5	41.0		9.7	24.8	30.0		5.5	39.4	1.0	K	9.8	16.6	50.1		9.3	15.0	1.3	
9.8	23.1	12.0		9.2	38.7	16.4	K	9.3	40.3	49.2		9.5	18.1	11.1		9.8	26.3	55.6	
9.8	25.0	2.6		8.5	39.6	7.1	Sj	8.8	53.9	32.5		9.1	24.1	56.7	K	9.3	30.8	22.5	
9.6	33.8	41.6		9.7	58.4	22.9		9.2	55.4	51.0		9.7	35.2	14.2		9.0	39.1	54.0	K
8.5	51.1	8.0	K	10	23 5.7	35.4		8.5	33 4.3	19.7		9.4	46.3	8.8		9.9	41.1	39.2	
9.3	14 25.7	1.2		9.4	8.7	14.0		10	19.2	14.5		10	49.0	2.3		10	41.2	13.8	
10	35.5	3.3		8.7	10.7	16.0	K	9.1	19.9	45.2		9.5	41 16.7	27.3		9.0	55.6	12.0	
8.2	38.7	14.5	K	9.8	21.3	55.7		8.8	21.7	36.8		9.4	32.0	50.9		10	50 2.2	20.5	
9.2	42.3	55.3		9.3	31.8	19.7	K	10	45.4	33.9		9.4	57.2	14.8		10	10.0	1.1	
9.1	15 1.7	37.6		9.6	48.7	48.3		10	53.0	29.9		9.4	42 9.2	7.3		9.2	16.1	13.6	
8.7	3.4	20.3	K	9.8	49.5	40.2		9.3	34 17.9	24.8	K	9.1	10.3	12.3	K	9.8	20.1	44.6	
9.3	22.3	4.4		7.5	54.9	51.7	B	9.8	20.3	47.4		9.4	13.2	54.3		9.2	25.1	13.8	
10	26.1	56.6		9.8	24 1.4	19.9		9.2	23.7	48.9		8.0	14.7	14.1	K	10	27.6	33.3	
8.8	32.0	31.6	M	9.4	15.1	36.4		9.6	29.5	38.1		9.4	22.0	30.9		9.2	33.9	26.9	K
9.8	41.4	1.8		8.6	22.6	56.1	K	10	32.1	25.1		5.5	23.5	59.2	B	9.0	37.2	32.0	K
9.2	46.3	44.1		8.5	23.0	38.9		9.8	33.5	8.8		9.3	45.8	47.0		9.8	46.7	19.9	
9.9	16 12.9	27.1		9.0	23.9	23.7		9.4	35 7.1	33.8		8.0	43 5.9	53.0	B	9.0	51 2.4	6.5	
9.0	27.8	50.0		9.3	25.6	8.3		8.5	12.3	20.1	B	10	6.4	35.2		8.9	14.1	45.3	K
7.4	44.0	45.7	B	9.7	39.8	48.6		9.9	14.1	2.4		9.7	26.9	32.3		9.1	23.4	45.3	K
8.5	47.1	4.9	K	9.4	25 18.2	36.4		10	18.9	51.1		9.4	27.5	30.7		8.8	25.0	37.7	Sj
9.2	47.7	6.4		9.1	23.7	14.5		10	24.8	6.0		8.5	28.7	16.6	L	9.1	28.2	18.2	
9.5	17 5.5	4.4		9.0	32.2	2.6		9.8	25.0	17.2		9.5	41.4	6.0		9.5	31.2	49.2	
10	12.2	35.5		8.8	39.4	25.3	Sj	10	36.5	28.0		9.5	58.1	45.0		9.9	37.8	25.6	
6.5	12.5	59.5	B	9.5	50.5	27.0		9.3	37.7	50.6		9.7	44 2.1	14.7		9.4	47.9	31.6	
9.1	27.9	24.9	K	8.8	51.2	44.6	B	9.6	41.4	50.3		9.4	3.2	3.6		8.2	52 26.8	45.9	K
8.3	49.3	45.4	K	8.2	26 42.5	42.2	K	9.8	36 1.3	18.9		8.5	11.0	34.6	K	8.8	28.1	17.1	K
9.5	18 3.3	9.3		9.8	57.9	55.3		9.6	7.1	28.0		9.4	11.2	13.3		9.1	32.2	48.9	
8.2	26.0	25.5	K	9.8	27 8.4	0.0		9.5	13.2	49.9		9.7	14.8	19.3		9.4	59.0	59.4	
9.1	28.0	0.3		8.9	9.8	4.0		9.5	21.0	27.9		9.3	15.9	16.9		9.4	53 3.1	36.9	–
9.6	31.5	27.5		8.8	23.5	40.8	B	9.5	36.1	5.0		8.2	17.3	5.6	K	9.0	8.7	20.5	K
10	31.9	24.6		9.6	46.1	29.4		10	56.2	46.4		9.8	36.1	43.4		8.0	16.3	49.3	L
9.0	36.4	20.1	K	9.7	28 3.5	48.0		9.4	58.1	2.0		9.4	39.1	49.2		9.8	26.2	49.5	
9.3	36.8	43.5	K	9.6	11.4	58.5		9.3	37 4.9	3.9		9.8	45 17.6	37.5		9.2	28.7	45.8	
9.8	44.8	47.8		9.6	13.0	29.8		9.3	14.7	36.2		9.6	25.8	46.2		9.2	29.5	58.5	
9.6	45.2	1.6		9.3	50.4	26.9		9.9	20.9	59.4		9.5	34.5	22.5		9.2	51.4	45.5	
8.5	58.4	2.7	K	9.8	51.1	4.4		8.7	21.6	33.0	M	10	46.0	41.6		9.5	57.4	44.2	
10	19 32.3	22.2		9.1	29 17.1	33.1		9.8	22.8	23.3		9.8	53.3	26.5		9.8	54 2.0	8.9	
9.1	37.9	24.6	K	9.4	27.2	13.1		9.4	32.5	6.9		9.7	53.9	3.5		9.8	8.2	5.0	
9.5	39.2	0.7		9.8	31.7	36.9		8.7	38 3.1	34.9	M	9.8	46 13.8	45.0		9.7	9.3	48.7	
9.3	42.7	25.7		9.8	31.9	1.5		9.4	15.6	45.9		9.8	21.1	44.5		9.4	27.4	26.8	
9.3	48.3	18.5		9.3	41.5	14.0		9.7	21.9	50.2		9.8	23.3	37.2		9.2	55.5	40.8	
9.0	50.5	4.8		9.8	57.4	27.6		10	29.4	13.8		9.6	23.3	31.2		9.7	57.3	24.6	
9.6	50.6	36.3		9.6	30 12.2	43.6		9.5	38.8	47.8		8.8	54.4	25.6	M	8.9	58.6	50.7	
9.4	52.1	57.4		9.6	20.1	16.9		9.2	45.4	22.0		9.8	47 20.0	21.9		8.7	55 26.6	51.8	
10	54.4	9.1		9.1	26.1	32.9		8.8	56.9	48.4	K	9.8	20.3	44.0		8.5	34.8	9.2	
7.0	20 7.1	31.2	K	9.1	32.0	25.5		9.5	39 2.0	5.5		9.8	21.1	42.6		8.8	41.2	11.0	
10	24.0	47.9		8.9	32.6	8.8		9.3	13.4	18.9		9.3	33.8	58.0		9.8	50.7	54.2	
9.2	26.8	6.5		8.8	52.2	50.8	A	8.7	16.8	20.4		9.2	37.8	50.9		9.4	50.8	8.5	
8.9	28.2	35.9	K	9.8	53.7	26.4		6.2	23.8	38.4	K	8.8	42.7	3.9	S	9.7	51.6	27.4	
9.5	43.9	43.2		10	31 14.4	26.2		9.0	25.0	33.1	K	9.4	48.8	57.2		10	56 20.9	31.2	
9.8	45.7	15.5		8.2	15.8	19.9	L	9.0	30.6	9.1		8.0	49.7	16.4		9.8	26.5	54.0	
9.3	51.5	5.8		9.3	23.0	8.7		10	34.2	53.0		9.9	48 0.3	33.8		9.8	31.1	52.0	
9.3	21 16.6	29.1		10	35.7	46.8		9.2	43.2	46.3	K	7.5	17.7	41.1		9.6	38.4	29.9	
10	24.3	37.1		9.7	38.0	32.1		9.6	46.1	48.4		9.8	26.5	5.3		9.8	41.7	19.8	
9.2	49.1	57.7		10	45.9	26.3		7.8	56.9	22.5	L	10	41.6	47.5		9.8	57 0.0	48.5	
9.8	22 0.8	19.1		9.8	48.6	7.2		9.6	40 0.1	48.8		9.2	45.2	18.8	K	9.8	15.6	39.2	

1525: röthlich

1701—1760				1761—1820				1821—1880				1881—1940				1941—2000			
	6h—7h	—14°			7h	—14°			7h	—14°			7h	—14°			7h	—14°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	57 17.5	37.9		9.0	5 8.9	7.5	K	10	11 49.0	11.7		8.8	17 30.0	27.5	K	9.8	24 25.4	13.6	
9.8	48.7	21.1		10	29.5	41.2		10	49.5	29.0		9.8	43.0	48.5		9.8	26.8	47.0	
9.4	58 4.8	46.8		8.9	30.4	33.8	K	10	59.1	56.0		9.8	51.7	55.7		9.5	38.0	54.6	
8.8	6.3	21.4	K	9.9	33.2	43.8		9.0	12 29.3	7.0		9.5	18 12.0	51.8		7.1	42.0	40.0	A
9.2	30.9	12.3		10	40.1	56.0		8.6	30.9	18.9	Sj	9.6	18.0	6.7		9.8	47.3	8.9	
9.8	32.5	34.4		10	51.5	0.9		9.4	39.0	51.8		10	21.0	49.4		10	48.6	27.0	
9.7	33.1	36.4		9.7	52.3	0.1		9.7	39.9	44.7		7.5	29.2	36.0	WC	9.8	53.2	19.6	
9.8	37.4	7.5		8.2	54.0	14.9	K	9.5	42.4	55.5		8.7	47.6	57.3	WC	9.5	25 3.7	48.4	
9.8	47.1	1.7		10	6 0.4	44.7		9.4	42.4	56.6		9.0	52.1	10.6		10	11.3	40.8	
8.2	56.6	39.5	L	9.7	10.0	46.2		10	49.4	9.5		10	59.7	4.6		8.5	21.3	21.5	
9.0	59 18.8	47.3		9.8	11.6	57.6		9.8	13 4.1	41.4		9.5	19 11.0	10.9		9.5	31.0	10.6	
9.7	19.9	44.3		9.4	19.8	21.9		9.8	7.7	48.8		9.5	26.6	29.6		8.9	37.1	45.3	
10	41.6	19.6		9.2	20.7	22.1	WC	9.2	8.9	8.6		9.4	29.4	48.0		9.2	44.4	40.8	
9.2	43.2	45.6		8.5	25.1	38.6	L	8.5	10.3	59.6	B	9.0	33.6	48.2		10	45.7	17.5	
9.3	52.6	30.1		8.5	35.0	51.2	B	9.6	14.5	49.8		9.5	42.1	18.4		9.5	50.6	16.2	
9.0	53.7	59.4		8.3	40.6	20.1	K	9.1	20.6	0.6		9.3	44.3	41.6	WC	9.4	57.3	5.8	
8.9	0 16.9	28.6		9.1	45.4	56.5	Sj	9.5	21.3	58.9		8.9	45.1	39.7	WC	9.4	26 6.0	24.1	
9.5	24.0	46.4		9.6	46.1	43.3		9.5	23.6	18.5		10	53.7	35.2		9.5	8.0	49.5	
9.5	25.4	53.0		9.7	48.5	2.9		9.4	27.0	40.0		9.7	55.9	0.5		9.8	14.7	40.2	
9.8	39.5	56.8		9.4	50.8	5.3		9.1	45.5	36.0	WC	9.8	59.0	9.1		9.8	17.1	32.1	
9.2	40.6	17.7		9.8	7 2.0	38.0		9.3	54.0	44.2		9.5	20 10.2	59.2		10	21.1	55.4	
9.6	41.0	8.2		9.7	6.3	0.4		9.8	59.5	13.4		9.7	16.4	3.6		9.5	24.3	44.9	
9.5	48.3	1.8		9.8	11.6	47.9		9.0	14 0.0	36.4	WC	9.8	26.0	7.3		9.5	29.1	33.4	
10	55.7	17.6		8.8	48.4	18.7	WC	9.2	13.4	45.3		9.8	27.3	31.6		9.1	30.7	52.2	A
9.5	1 38.0	10.4		9.5	50.0	44.2		10	17.4	45.5		10	38.6	24.2		9.8	42.2	24.1	
9.3	38.3	35.5		9.5	56.4	40.1		6.2	19.1	5.2	K	9.9	43.1	43.5		6.8	42.2	1.8	K
9.8	42.8	3.5		9.8	8 7.9	9.1		10	23.2	19.4		9.5	48.8	41.1		9.5	51.8	2.0	
9.6	43.8	41.1	WC	9.8	21.1	53.8		9.8	23.4	38.5		9.3	58.5	11.6		9.5	27 0.1	4.7	
8.9	48.0	40.1	WC	9.5	27.5	35.2		9.2	23.9	22.6	WC	9.5	21 1.1	53.4		9.1	0.3	6.6	K
10	49.3	28.6		7.2	31.2	21.6	B	9.4	26.2	8.4		9.8	3.0	24.9		8.7	3.9	50.8	K
9.3	56.0	41.2	WC	9.5	35.7	7.2		9.8	29.4	39.9		9.4	7.6	54.9		5.8	8.0	12.7	K
8.6	2 22.7	43.8	WC	9.6	55.0	50.4		9.8	31.7	23.6		9.6	12.9	23.1		9.8	8.1	17.3	
9.8	28.8	23.1		9.2	57.8	48.6		8.8	33.8	5.3	K	9.0	27.8	42.8		8.7	10.0	58.7	A
8.7	30.2	12.0	K	9.5	•9 2.5	49.1		10	36.6	27.6		9.0	30.6	32.7		9.7	20.3	46.1	
8.8	47.3	47.7		8.5	13.7	14.6	B	9.8	52.6	45.6		9.0	36.7	4.5	L	9.4	24.9	25.7	
9.5	54.6	45.9		9.3	15.3	1.2		9.5	15 5.3	36.5		10	41.8	55.9		10	37.4	48.7	
9.5	57.2	58.0		7.2	27.5	15.1	B	9.8	6.3	57.2		9.7	47.0	55.9		9.2	53.8	46.5	K
8.9	3 0.7	33.4	K	9.1	36.5	36.4	Sj	9.7	8.3	0.7		9.5	48.0	1.2		9.8	55.9	19.8	
9.0	11.5	48.5		9.3	38.4	31.2		9.8	15.3	14.8		9.1	54.9	39.6		9.2	56.3	44.4	K
9.4	12.4	40.2		9.8	41.2	56.8		9.3	19.8	30.2		9.4	59.4	36.5		9.1	28 16.1	38.1	K
9.0	16.4	11.5		9.5	44.3	41.5		8.6	20.9	49.2	K	10	22 20.1	0.9		9.8	16.6	1.2	
9.4	31.8	37.8		9.8	44.7	54.8		8.7	23.2	32.0	K	9.9	23.7	16.6		9.2	24.4	43.7	
8.9	31.9	16.6		9.0	54.0	37.3	K	9.1	23.4	2.2		8.7	33.5	44.7	A	9.8	35.8	23.5	
8.3	44.4	31.8	K	9.5	58.9	49.9		8.5	24.5	26.8	Sj	9.1	39.4	0.7		9.1	49.9	45.0	K
9.7	45.3	2.2		9.0	10 2.0	50.0	A	9.4	35.4	1.0		6.7	46.4	41.7	A	9.5	51.9	8.4	
10	52.6	20.0		9.8	6.1	15.3		9.5	41.6	20.8		9.0	47.0	51.5		9.4	52.0	30.1	
9.8	59.4	34.8		9.7	13.4	1.2		9.8	50.2	54.6		9.5	23 9.0	50.7		9.0	57.5	21.5	
9.5	4 3.0	47.6		9.6	14.8	48.8		9.8	50.9	32.1		7.7	15.0	3.6		9.5	58.1	17.1	
9.1	13.0	14.2		9.8	25.9	20.4		9.7	16 0.6	49.9		9.4	17.7	2.9		9.8	29. 2.2	9.1	
9.6	15.0	12.6		8.2	28.5	35.1	K	9.7	11.8	42.8		9.5	27.1	10.8		9.3	2.9	0.4	
9.5	16.3	7.5		9.8	34.1	20.9		9.8	25.8	49.3		9.8	37.7	17.0		-10	10.0	16.6	
9.1	17.7	59.3	Sj	10	49.8	39.9		8.5	36.3	35.9	K	8.2	40.6	42.1	A	10	13.0	16.7	
10	17.9	35.7		9.1	58.9	19.6		9.2	37.2	34.8	K	9.5	44.0	4.2		9.8	14.3	21.7	
9.8	30.5	2.7		9.0	11 1.9	3.3	K	9.3	55.1	29.2	WC	9.3	52.9	23.7		8.5	17.6	23.3	K
9.6	33.0	8.2		9.0	7.8	0.3	K	9.2	56.7	53.9		9.5	56.7	40.5	A	9.8	17.9	36.9	
9.8	36.6	8.9		9.0	8.7	45.5	A	8.6	17 0.6	56.4	WC	9.8	24 0.2	40.0		9.5	19.9	9.4	
9.4	39.7	42.5		9.2	9.3	35.3	WC	9.5	2.5	46.6		9.8	6.9	25.9		10	20.7	40.4	
9.5	47.8	6.0		9.1	10.2	4.3		9.8	13.7	51.3		10	9.7	59.9		10	22.3	50.2	
9.0	49.7	0.0		9.3	19.9	29.8		9.2	18.4	0.5		9.1	17.3	55.2	A	6.9	23.7	10.3	L
8.3	59.2	46.7	K	9.8	22.9	32.8		8.2	28.9	31.8	K	9.8	22.9	6.5		9.5	24.7	10.1	

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	7h	—14°			7h	—14°			7h	—14°			7h	—14°			7h	—14°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.5	29 29.2	22.8	K	9.0	31 57.2	39.9	WC	10	34 56.3	25.6		9.0	36 55.4	8.7	B	9.7	44 35.0	0.6	
8.6	29.5	5.0		10	57.5	19.4		9.5	56.4	5.8		9.8	37 2.1	19.2		9.8	51.1	22.1	
9.6	30.8	3.9		9.1	32 3.5	12.5		10	57.8	23.0		9.2	4.3	46.1		9.4	45 0.5	44.7	
9.6	30.8	20.9		9.2	6.4	26.1		10	58.1	8.2		9.1	17.0	46.2		9.5	3.9	29.2	
9.7	30.8	8.4		8.5	11.0	45.4		10	59.6	20.6		10	35.8	26.0		8.2	8.7	53.1	A
10	32.2	19.0		9.0	14.5	0.4		10	35 1.2	34.4		9.4	41.8	29.4		9.3	16.1	40.1	
9.7	34.7	36.4		9.0	16.1	2.1		9.9	2.4	27.8		9.8	59.5	53.8		9.4	18.6	58.1	
9.9	35.7	16.3		9.5	20.7	22.0		9.9	5.7	30.2		9.4	59.9	19.4		8.7	23.3	31.0	
10	36.9	26.8		9.4	23.2	45.0		neb	8.7	23.3		9.5	38 0.5	35.5		9.5	27.4	13.6	
9.4	40.0	16.5		9.4	36.6	0.5		10	10.4	33.0		8.0	9.6	44.1	Sj	6.3	38.8	28.6	L
9.7	40.5	26.5		9.5	37.8	6.4		10	10.5	27.0		9.5	29.1	44.4		8.5	40.0	56.8	A
9.0	42.3	10.9		9.5	39.8	53.4		10	10.6	31.0		10	29.5	56.7		9.5	43.1	40.4	
9.0	42.4	25.4		9.0	46.3	57.3		10	12.3	24.8		7.0	48.9	20.1	K	9.5	49.1	56.8	
9.4	44.0	16.7		10	48.5	47.2		9.0	12.8	39.4		7.0	49.4	20.5	K	10	56.8	32.3	
9.6	45.7	10.0		9.8	49.1	45.3		10	13.7	26.8		9.4	53.5	35.6		9.3	46 0.2	10.2	
7.8	48.2	16.6		9.6	53.0	42.4		10	14.0	34.6		9.8	57.6	0.5		9.8	12.9	59.8	
9.5	49.4	8.1		9.5	33 3.6	17.8		10	15.3	45.0		9.0	58.2	35.7		9.5	16.7	55.8	
9.0	51.2	20.8		9.5	6.5	56.6		8.6	17.2	4.1	K	9.0	39 14.7	49.3	L	9.0	22.0	39.0	
9.1	54.8	6.5		9.8	24.1	4.8		9.6	19.6	29.0		6.0	16.4	12.6	K	9.7	28.1	8.8	
8.0	55.7	10.0	L	9.4	26.2	38.3		9.9	21.5	31.0		8.6	40.1	43.0	L	8.9	28.4	38.6	K
8.0	56.4	10.1	K	9.5	30.8	53.3		9.7	24.5	33.1		9.1	45.5	32.7		9.8	35.2	43.2	
9.0	56.7	8.4		5.4	45.3	55.7	B	9.9	25.8	25.0		9.3	53.0	53.0		9.7	46.8	10.8	
9.7	59.3	4.0		9.7	49.6	12.3		10	30.7	19.5		9.0	56.9	10.5		9.1	47 2.0	35.3	K
9.8	30 0.7	9.6		8.5	52.8	18.6	WC	10	31.2	11.3		9.6	57.1	4.8		9.2	3.2	7.5	
8.0	1.3	7.5	L	9.1	34 0.1	4.5		9.9	31.2	27.0		9.5	40 19.7	9.5		9.6	3.7	17.0	
10	2.1	35.3		9.0	3.9	56.7		10	31.9	38.4		9.8	22.9	18.2		9.8	21.3	50.5	
9.3	5.0	40.5		9.8	5.2	40.8		10	33.2	57.6		10	24.2	4.3		9.5	34.4	34.1	
9.7	5.6	5.1		9.3	6.1	20.3		9.7	35.6	46.1		9.4	24.7	49.5		9.0	34.8	9.1	K
8.6	7.7	14.6		9.1	6.1	10.7	K	9.7	36.7	48.0		9.4	30.5	52.4		9.3	48.1	2.7	
9.5	8.5	45.0		10	8.2	26.1		9.7	36.8	29.7		9.3	39.3	19.3		9.3	48 1.2	5.0	
10	10.0	53.8		9.6	11.4	26.8		9.6	38.4	14.2		8.5	45.2	14.9	WC	9.4	11.6	3.7	
9.6	11.6	5.3		10	13.3	2.5		10	39.3	36.0		9.0	46.7	25.5	WC	9.6	12.9	17.0	
10	12.9	12.1		10	14.3	32.6		10	47.3	31.6		10	41 3.4	34.2		9.8	21.1	26.1	
9.7	14.2	14.2		9.4	16.6	47.2		10	47.4	32.9		9.8	7.9	43.6		8.7	22.9	15.3	K
9.8	15.5	48.0		10	19.4	39.6		10	50.1	29.3		9.3	19.1	57.3		8.7	45.2	20.6	K
10	22.3	11.8		10	19.8	2.2		9.8	50.9	59.4		10	28.1	41.5		9.4	52.0	48.0	
9.8	25.1	3.2		9.4	23.2	14.0		9.2	52.1	57.0		9.9	31.2	6.9		9.4	49 4.2	55.8	
10	26.7	12.3		9.9	23.7	27.5		8.6	36 0.1	0.5	K	9.8	40.5	52.5		10	5.3	12.5	
8.6	27.9	0.3		8.7	25.0	43.2		10	1.7	39.8		9.4	49.2	43.5		9.8	17.1	54.3	
9.8	28.3	14.1		10	29.3	24.8		10	1.8	26.6		9.2	54.9	13.9		9.1	24.2	33.9	
9.7	34.2	6.2		9.2	29.6	10.9	K	10	4.2	28.4		9.8	42 9.8	11.4		8.2	31.7	31.0	K
9.8	36.6	4.3		8.9	29.6	31.4		9.5	4.3	5.6		9.8	16.0	37.1		9.5	39.2	27.4	
9.8	36.7	17.9		9.5	30.9	7.5		10	6.0	17.2		8.7	20.0	15.0	WC	9.8	40.4	46.0	
10	38.4	12.6		10	33.0	20.5		10	6.5	25.7		9.4	27.8	20.1		9.3	42.3	1.9	
9.4	40.7	41.7		9.3	33.3	16.5		10	7.4	39.7		9.3	28.3	55.7		9.8	47.4	37.1	
10	42.6	16.6		10	37.4	32.3		9.0	9.7	31.3		9.4	32.4	3.4		9.7	48.8	55.8	
9.9	50.5	20.5		10	39.1	37.9		10	11.3	12.4		8.9	34.1	55.8	A	9.4	55.0	40.0	
10	50.6	19.6		10	39.2	21.0		9.7	11.4	24.2		9.6	36.1	21.0		9.3	56.6	44.6	
10	55.7	12.3		9.5	39.3	59.8		9.4	13.9	25.9		7.8	50.5	59.0	A	9.3	56.7	59.1	
10	56.6	35.7		10	40.4	34.7		10	16.1	8.7		9.0	43 7.9	17.3		9.5	50 9.7	8.5	
9.3	56.7	46.3		9.7	40.6	28.6		8.8	16.8	39.7	B	9.1	10.5	38.9		9.7	27.1	54.2	
9.1	56.8	6.1	K	8.5	44.1	29.0	Sj	9.8	19.3	50.0		9.2	16.7	41.2		8.2	32.6	7.9	K
7.5	58.6	6.9	K	9.6	44.1	25.3		9.7	19.7	58.9		9.0	19.3	53.4	A	8.0	33.3	13.0	K
9.6	31 2.3	30.3		9.4	47.6	58.7		9.4	29.9	29.7		9.2	53.2	46.0		9.1	40.1	43.2	
9.8	6.3	16.4		10	48.3	30.9		9.9	31.9	28.7		9.1	54.0	42.8		9.8	50.2	12.0	
9.2	8.2	28.1		9.8	49.6	26.9		9.6	33.4	9.9		10	54.4	16.0		9.9	52.8	12.2	
9.2	15.1	25.8		10	50.4	23.0		10	37.5	31.8		9.5	55.7	3.8		9.3	57.5	45.0	
10	32.6	35.9		9.5	50.7	34.0		8.7	38.7	29.6		9.8	44 10.5	19.6		9.3	59.4	53.7	
9.1	38.3	27.5		9.7	52.7	17.6		9.6	48.7	42.5		10	25.5	30.1		9.0	51 1.2	8.2	K
9.6	56.6	17.6		9.9	55.1	31.4		10	54.3	37.2		8.9	29.2	52.9	K	9.5	2.8	5.5	

2301—2360

	7h		−14°	
m	m	s	′	
8.5	51	3.6	13.0	K
9.1		9.5	19.1	
9.5		18.8	50.1	
7.8		25.4	15.0	K
9.5		35.1	52.1	
9.8		42.1	25.3	
9.8		43.0	50.3	
9.0		44.9	37.0	
8.8		50.2	50.7	
8.5	52	10.1	27.5	
9.4		41.7	5.7	
9.5		53.5	6.0	
9.1		57.0	12.9	
9.3	53	6.9	10.3	
9.4		8.0	9.9	
9.4		8.1	3.4	
9.5		18.9	37.0	
9.3		34.3	51.6	
9.0		53.0	24.9	M
9.0	54	0.2	16.6	
9.5		4.7	50.3	
9.5		9.3	35.4	
9.1		11.3	36.7	
10		14.7	58.1	
9.5		15.1	39.8	
9.0		21.8	6.8	M
9.1		23.5	47.7	
9.5		25.5	20.8	
10		39.4	44.0	
9.5		54.3	15.1	
7.3		54.7	51.2	
8.2		56.5	21.8	Sj
9.6	55	22.0	13.3	
9.4		22.5	39.3	
9.1		23.7	29.4	K
9.7		25.6	42.2	
9.3		37.5	41.0	
9.8		41.5	42.0	
9.4		49.6	55.8	
9.0		51.4	57.3	A
9.0		55.5	52.4	K
9.0		58.9	38.6	K
9.5		59.2	19.0	
9.3	56	3.4	23.5	
10		18.3	8.6	
9.5		34.7	58.5	
9.8		49.0	52.4	
9.0		50.9	56.9	K
9.4		52.0	23.4	
9.6	57	11.2	51.6	
9.4		17.1	30.1	
9.7		22.5	44.6	
9.8		37.1	46.9	
10		43.5	29.7	
8.9		58.9	29.6	K
9.4	58	1.0	48.5	
9.5		7.8	53.3	
9.5		10.0	17.0	
8.8		12.9	58.9	A
9.2		17.5	52.9	A

2361—2420

	7h—8h		−14°	
m	m	s	′	
9.5	58	32.6	53.1	
8.5		39.3	16.0	K
9.5	59	1.7	25.4	
10		1.8	20.0	
8.8		5.6	5.5	K
9.0		8.1	57.3	A
9.3		42.9	20.6	
9.3		45.1	9.9	
9.3		45.5	1.4	
9.3		51.0	16.1	
9.8		58.0	44.2	
8.7		58.8	26.8	
9.5	0	13.0	53.7	
9.2		27.0	43.1	
9.0		27.9	11.5	K
9.6		37.4	23.1	
9.7		40.4	56.0	
9.5		41.2	23.4	
10		51.4	42.3	
9.4		56.5	32.5	
9.6	1	2.7	32.4	
9.0		24.9	13.9	K
9.3		31.8	52.5	
9.3		34.7	35.4	
8.5		41.3	44.5	K
9.3		46.4	22.4	
8.4		49.7	48.1	K
9.4		53.0	46.4	
8.6	2	2.4	48.7	K
9.8		11.6	8.0	
9.5		13.1	48.3	
10		24.4	1.8	
8.0		26.0	9.4	K
9.5		33.0	56.8	
9.3	3	0.1	37.3	
9.3		3.2	25.7	
10		15.0	48.2	
8.3		16.6	11.4	K
9.5	4	9.3	38.7	
9.1		15.2	28.1	
9.0		23.7	52.0	
9.6		30.7	47.9	
9.5		38.8	0.6	
8.2		46.4	0.6	K
9.3		52.7	56.4	
9.0	5	9.2	14.4	K
9.3		9.5	45.6	
9.4		9.6	58.5	
9.3		23.4	54.8	
9.5		35.7	15.4	
10		37.0	51.5	
9.8		37.7	45.2	
9.8		42.1	32.9	
9.5		49.7	2.8	
9.3		53.7	48.6	
9.0		55.9	52.7	
8.8		56.3	50.3	
9.0	6	0.7	58.0	
9.0		1.1	16.0	K
8.8		3.5	8.6	K

2421—2480

	8h		−14°	
m	m	s	′	
9.0	6	13.9	12.4	
9.0		15.6	31.2	
9.1		17.7	20.4	
8.3		21.3	20.1	K
9.1		26.2	54.5	
10		39.4	57.4	
9.5		47.6	50.9	
9.1	7	0.4	25.9	
9.3		4.0	28.1	
9.3		11.1	58.2	
9.7		11.7	42.4	
9.5		13.3	14.3	
10		21.8	9.1	
9.5		25.6	54.7	
9.7		28.1	8.3	
9.2		29.3	11.2	
9.8		30.5	5.0	
9.5		46.6	39.5	
9.8		48.7	15.2	
8.8	8	3.2	52.7	
9.5		35.4	27.2	
9.4		40.3	5.6	
9.8		48.3	58.0	
9.4		59.4	57.4	
9.8	9	10.8	21.0	
9.8		21.0	26.9	
9.1		29.1	32.5	
9.5		30.2	20.8	
9.6		32.3	2.1	
9.6		42.8	49.8	
9.1		48.4	23.3	
9.0		56.5	30.4	
9.5	10	0.1	0.4	
9.3		1.6	51.0	
9.2		9.2	19.4	
7.0		10.1	42.5	K
8.5		10.7	30.1	K
10	11	10.6	15.8	
9.8		16.5	55.0	
8.0		18.5	31.6	Sj
9.8		21.2	11.7	
9.6		21.4	50.4	
10		33.1	16.6	
9.7		43.5	30.5	
8.8		52.8	59.1	
7.1		53.0	7.1	Sj
9.7		53.3	51.0	
9.6		57.5	38.3	
9.3	12	1.9	45.2	
9.2		24.9	45.7	
8.8		28.6	25.3	
9.5		49.4	23.4	
9.3		59.7	40.7	
8.1	13	20.5	9.3	L
9.0		23.4	26.3	
9.3		35.3	24.2	
9.5		44.8	59.4	
9.6		46.0	55.3	
9.4	14	1.2	41.1	
9.3		3.6	17.0	

2481—2540

	8h		−14°	
m	m	s	′	
9.8	14	14.3	53.2	
10		22.8	3.9	
7.1		36.0	31.1	Sj
9.0		37.9	47.7	
9.0		45.2	20.5	
9.3		47.3	50.2	
8.8		53.7	58.4	M
9.8	15	5.5	53.6	
9.8		13.0	44.3	
9.3		17.3	25.5	
9.5		22.6	16.2	
9.4		29.6	16.4	
9.1		32.5	13.4	
9.8		52.4	7.2	
9.6	16	4.2	41.2	
9.5		18.5	11.2	
9.8		25.2	49.5	
9.2		29.2	51.8	
9.8	17	15.1	0.5	
9.8		18.1	48.2	
9.8		23.2	42.6	
9.2		51.1	54.9	
8.2		54.8	8.0	K
7.3		55.5	59.3	A
8.7	18	1.7	43.3	
9.4		5.6	49.3	
9.8		5.7	1.3	
8.3		6.7	22.1	Sj
9.5		14.0	15.6	
7.3		15.9	49.5	A
8.8		20.5	41.8	
9.3		35.9	30.7	
9.4		39.9	7.4	
9.7		44.0	54.6	
8.0	19	5.5	57.5	K
9.4		7.4	45.8	
6.4		11.7	27.9	K
9.4		17.2	24.3	
9.8		25.1	32.1	
9.9		25.7	29.4	
9.8		35.1	50.5	
9.1		52.1	33.9	
9.8	20	9.4	41.6	
9.7		26.1	58.1	
9.9		38.7	55.1	
7.0		42.5	27.5	Sj
9.4		49.1	43.8	
9.7		52.3	42.2	
9.3		53.0	57.4	
9.7	21	4.3	2.0	
9.5		18.1	8.8	
8.5		32.1	6.1	K
9.3		33.0	54.3	
9.8		38.7	44.5	
9.3		40.9	26.4	
8.6		43.0	30.2	L
9.5	22	8.2	43.8	
9.8		12.7	2.8	
9.1		34.0	54.9	
9.4		42.6	8.8	

2541—2600

	8h		−14°	
m	m	s	′	
10	22	47.0	53.3	
9.1		56.8	2.3	S
9.3	23	1.5	58.5	
9.4		22.3	43.2	
9.2		24.1	24.6	
9.4		24.6	50.1	
10		31.2	17.0	
8.2		39.2	52.9	
9.5		40.4	50.6	
9.3		43.6	41.1	
9.4		53.2	29.0	
8.0	24	19.6	42.0	S
9.5		31.0	35.5	
9.0		31.0	0.9	
9.3		39.9	39.4	
9.5		45.4	27.0	
10	25	6.5	5.0	
9.8		18.3	26.0	
9.8		33.2	9.9	
9.8		38.5	46.2	
9.6		39.6	44.7	
9.5		42.0	32.3	
9.0		43.7	55.1	
6.8		48.4	32.4	
9.2		56.6	52.1	
9.4		57.0	21.0	
9.8		59.0	36.1	
9.2	26	11.7	45.8	
8.9		13.6	10.7	
10		34.1	4.0	
9.1		41.5	16.3	
8.3		45.6	42.7	
9.3	27	7.0	35.6	
9.2		20.1	2.1	
9.6		39.7	1.6	
9.2		42.3	46.2	
9.5		42.3	17.6	
9.9	28	30.5	41.0	
8.4		38.0	43.2	
10		47.1	34.8	
9.5	29	1.7	21.8	
9.5		20.5	53.8	
8.0		29.9	37.6	
10		30.0	0.1	
9.5		41.1	33.0	
8.5		48.2	6.6	
9.7		58.8	40.2	
8.6	30	6.0	15.8	
8.8		6.2	58.5	
9.0		17.9	35.6	
9.6		30.4	34.3	
9.3		45.6	0.6	
9.3	31	30.5	43.0	
8.0		35.9	45.9	
9.1		42.4	40.9	
8.7		56.5	13.2	
8.7	32	9.0	10.1	
9.2		13.4	33.9	
9.0		16.7	39.8	
9.8		17.5	49.3	

2601—2660					2661—2720					2721—2780					2781—2840					2841—2900				
	8h		−14°			8h		−14°			8h—9h		−14°			9h		−14°			9h		−14°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.2	32	21.2	59.6		9.1	42	14.4	18.3		9.7	53	12.0	38.1		9.0	6	32.2	6.3	K	9.1	16	43.9	6.7	
10		38.3	37.0		10		19.6	36.0		8.3		29.1	15.2	K	9.8		34.1	34.1		9.0	17	0.8	28.8	K
9.9		46.4	32.5		9.8		19.9	8.1		10		45.5	49.0		9.2		35.6	44.6		9.5		12.3	51.2	
9.0	33	5.1	59.8		9.8		22.1	30.0		9.8		45.8	28.1		9.6		51.7	2.0		9.2	18	9.1	21.0	
10		9.4	38.7		9.0		50.4	56.4		9.8	54	19.0	10.2		9.3		56.6	15.0		9.3		24.1	3.4	
9.8		12.0	51.9		9.1		55.3	9.4		8.4		20.8	49.5	M	6.9	7	11.1	6.0	K	9.0		29.6	0.6	
9.2		13.5	43.1		9.7		58.2	32.9		9.4		33.1	18.9	K	9.6		27.5	30.6		9.7		34.6	44.4	
7.8		18.0	31.4	Sj	9.5	43	16.8	15.6		9.3		33.2	6.9		9.3		46.1	40.6	A	9.4		34.9	11.8	
9.5		18.5	43.5		7.8		40.6	4.3	M	8.5		45.9	36.8	K	8.0		49.4	21.0	K	9.6		39.1	43.1	
8.5		33.8	47.4		9.3		44.6	55.4		9.5	55	32.9	37.9		9.0	8	0.8	15.8	K	8.9		46.4	2.7	K
8.2		37.7	11.5	K	9.8		50.4	4.4		9.8	56	5.0	43.7		9.3		10.5	54.0		9.0	19	4.8	34.1	
9.1		43.9	8.5	K	9.9		57.2	38.9		8.5		12.1	18.1	K	9.4		28.0	28.4		9.7		19.0	49.7	
9.4		44.8	45.9		9.3	44	5.7	48.7		8.3		25.4	41.0	M	6.8		33.9	25.8	K	10		26.9	8.0	
8.5	34	11.0	39.3		10		11.5	49.5		9.1		25.8	53.2		9.0		43.5	45.2	Sj	10		27.7	12.0	
8.8		16.8	20.7	M	9.0		15.1	32.6		9.7		43.8	45.4		10	9	0.8	47.3		9.2		34.9	22.2	
9.3		29.6	10.5		9.1		28.8	47.7		9.6		55.4	38.7		9.4		24.9	26.3		10		45.2	50.8	
9.7		29.9	34.6		8.5		43.5	51.4	L	9.1	57	22.3	38.1	K	9.5		27.1	26.0		9.8	20	11.8	30.9	
9.4		30.8	36.1		9.4	45	7.3	6.9	K	9.1		24.5	21.3		9.6		41.0	40.9		9.5		14.0	45.8	
9.7		57.4	59.9		9.6		8.4	26.5		9.7		44.5	44.7		9.7		57.6	34.5		9.5		39.9	38.4	
9.6	35	4.3	7.2		10		11.0	53.8		10	58	26.4	0.5		9.1	10	5.9	48.5		7.5	21	0.0	14.0	K
10		8.3	47.6		9.0		22.1	31.4	M	8.5		47.5	0.3	L	9.1		8.3	52.7		9.8		25.1	24.3	
10		28.1	28.1		9.8		31.2	12.8		9.0		54.6	24.7	K	8.2		12.5	54.1	M	10		33.1	48.1	
9.2		42.4	10.9		9.4		31.2	24.0		8.7		56.4	13.2	K	9.1		17.2	30.9		9.1		49.2	3.6	
9.3		49.7	0.5		10		42.8	22.7		9.2		58.5	16.5		9.7		17.7	3.5		9.1	23	4.1	27.3	
9.2		51.0	17.1		10		44.0	13.0		9.8		59.4	15.5		9.8		26.1	35.2		8.6		23.2	59.4	B
9.1		54.2	54.4		10		54.6	47.3		9.6	59	35.7	41.3		10		55.1	39.0		9.3		26.6	54.8	
9.1		55.8	52.2		9.6		55.8	0.4		9.3		40.0	50.5		9.6		56.0	42.3		6.3		30.4	56.6	B
9.8	36	6.8	4.9		8.5		57.8	20.1	K	9.5		45.7	33.5		9.6	11	3.4	3.6		10		32.6	10.7	
8.4		8.6	28.3		8.8		58.4	58.2	K	10	0	1.2	33.0		9.8		5.5	55.1		10		33.2	26.0	
8.7		22.7	28.6		9.6	46	30.5	4.3		10		26.7	54.7		9.3		15.7	2.8		9.0		45.3	31.6	
8.5	37	5.7	32.7	Sj	8.3		35.5	50.6	K	9.1		36.2	55.5		9.0		32.6	53.5		9.8	24	5.8	48.6	
9.8		9.3	56.4		9.5		40.8	40.7		9.3		43.7	31.2		9.4		32.6	39.1		8.5		9.7	10.9	K
9.3		17.1	27.4	K	9.8		45.9	3.8		10		54.1	0.1		9.0		42.0	33.6	Sj	9.6		10.1	1.0	
9.4		25.0	53.0		9.9		53.9	28.5		9.7	1	3.7	41.7		9.4	12	0.5	49.0		9.3		34.5	30.6	
9.8		52.9	34.8		9.0		54.5	50.2	K	9.2		33.8	47.5	K	9.3		0.9	34.8		10		54.6	41.0	
9.6	38	13.9	44.7		9.0	47	10.2	41.4	M	9.4		39.5	21.1		10		29.9	51.7		8.5	25	3.2	7.8	K
8.2		19.6	53.8	K	9.2		24.1	39.8		7.2		40.5	33.4	B	10		56.1	8.1		9.6		5.1	20.6	
9.8		21.0	48.7		9.8		54.8	22.7		9.8		42.1	49.0		9.5		56.9	34.2		9.6	26	2.4	26.5	
9.8		32.3	15.7		10		59.2	18.6		9.4		56.2	54.6	A	8.6		59.6	10.4		10		3.6	8.1	
9.8		46.5	25.2		8.5	48	7.8	33.8	K	9.9	2	22.0	26.5		9.2	13	0.7	54.2		9.4		20.3	58.1	
9.5	39	16.2	53.2		9.5		8.7	17.5		9.8		26.6	27.6		9.8		13.2	48.1		9.7		24.4	14.9	
10		20.6	1.6		9.8		11.3	46.3		9.4		43.0	42.4		9.8		13.7	49.7		9.7		24.7	40.7	
10		21.5	5.4		9.6		22.1	49.8		9.4		48.9	16.7		10		30.3	30.0		8.8		39.7	47.9	
10		22.4	32.7		8.5		42.5	4.5		9.8		51.3	37.8		8.8		38.5	8.1	K	9.4		54.1	4.5	
9.4		24.0	41.3		9.5		45.8	20.1		9.5	3	8.4	57.2	A	9.8		49.4	45.2		9.8	27	15.5	1.7	
9.1		48.7	57.0		9.0		55.0	58.5	K	8.5		15.7	31.6	K	9.0		54.5	37.8		9.3		19.0	44.5	K
9.5	40	14.7	59.0		6.5	49	6.9	53.4	K	9.1		21.3	14.0	B	9.4	14	3.4	47.0		9.6		25.3	3.4	
9.4		16.0	40.6		9.9		45.4	50.1		9.5		23.6	26.1		6.8		3.9	59.9	B	9.0		37.2	23.8	K
9.1		19.7	36.1		8.9	50	24.4	0.8	K	7.5		35.4	18.7	Sj	9.6		5.0	39.2		9.7		56.3	48.3	
10		22.1	30.3		9.7		26.3	28.0		10		59.4	17.8		9.0		7.8	50.8		10	28	15.1	9.0	
9.9		31.3	12.6		9.8		57.2	21.3		9.3	4	0.8	28.5		9.1		18.9	55.0		9.6		23.8	40.2	
9.6		33.5	39.0		8.9	51	14.8	25.4	K	8.0		5.5	52.3	A	9.9		29.9	1.0		9.8		32.7	54.3	
9.4	41	3.3	11.4		9.7		15.0	43.2		8.0		26.4	21.8	K	10	15	2.3	53.1		9.6		34.9	2.8	M
9.5		11.0	20.3		9.1		24.0	49.0	A	9.4	5	13.2	5.0		9.2		27.8	52.0		9.2		40.5	9.7	
10		20.5	24.8		9.0		59.3	25.9		9.5		13.5	25.2		7.3		40.5	37.3	L	8.6	29	7.8	25.1	K
9.3		27.5	26.0		9.4	52	0.9	57.5		8.8		26.0	41.1	K	9.8		43.1	8.7		10		15.2	52.1	
10		32.3	5.2		10		37.5	40.0		9.5		52.6	6.1		9.1		45.4	56.2	M	8.5		16.6	9.7	M
9.2		54.6	31.2		10		43.0	59.3		9.3		57.1	52.5		9.6		49.3	47.8		10		34.0	6.1	
9.7		54.8	12.3		9.5		51.8	55.4		10	6	0.3	43.1		9.3		53.5	40.0		9.1		49.2	0.0	
9.5	42	3.7	54.6		8.0		52.7	26.8		7.7		8.0	49.8	Sj	8.5	16	4.8	52.7	B	9.5	30	11.2	51.0	

2901—2960

	9h		−14°	
m	m	s	′	
9.7	30	14.0	36.3	
9.8		15.2	9.4	
9.8		22.4	13.9	
8.0		23.1	11.9	Sj
9.6		46.4	44.9	
10	31	2.8	59.3	
9.0		33.3	59.0	B
9.3		56.3	34.8	
9.3	32	25.2	32.4	
9.8		37.8	9.4	
9.8	33	10.6	51.2	
10		18.0	15.8	
9.1		19.3	31.6	
9.1		27.7	29.7	
9.2		31.1	54.3	A
9.8		42.6	53.1	
9.5		56.1	18.2	
9.5		58.5	17.4	
9.3	34	13.2	32.5	M
10		52.3	0.2	
8.5	35	1.6	46.6	K
9.7		12.8	22.7	
9.9		14.8	57.5	
9.5		32.2	59.1	
8.8		33.1	19.6	K
9.4		35.5	16.3	
8.4		36.3	21.7	K
9.3		43.3	0.0	
9.6	36	5.7	14.0	
10		17.6	59.1	
9.9		19.4	40.1	
9.9		29.7	35.8	
8.5		46.2	30.7	L
9.5		57.0	57.5	
9.5		57.8	8.1	
9.5	37	18.8	7.9	
9.7		58.7	33.8	
8.6	38	9.4	20.2	K
9.2		19.1	25.0	
10		39.3	43.2	
9.2		41.7	45.6	K
9.1		44.2	32.7	
9.6	39	10.9	2.4	
9.5		39.0	52.5	
10		40.3	42.5	
9.4	40	19.9	1.8	
9.2		28.2	14.6	
9.8		35.8	52.5	
10		49.3	42.9	
10		51.6	4.6	
8.5		58.8	16.2	K
9.1	41	6.2	44.9	M
10		38.3	45.2	
10	42	20.3	17.2	
9.3		51.1	37.5	
9.6	43	9.6	39.8	
8.8		19.9	41.4	K
9.1		55.7	57.8	
9.5		58.1	10.9	
8.4	44	15.3	0.4	M

2961—3020

	9h		−14°		
m	m	s	′		
9.7	44	20.0	8.3		
9.8		27.0	31.5		
5.0		30.9	10.0	K	
9.0		36.5	42.4	K	
9.0		55.6	14.6	K	
9.2	45	2.2	36.2		
9.5		4.4	6.3		
9.2		10.8	57.8		
10		21.4	31.6		
8.9		25.8	40.4		
9.8	46	7.1	26.9		
9.6		7.8	28.1		
9.8		15.7	24.2		
9.8		23.4	42.4		
9.3		36.3	29.5		
9.8	47	55.7	26.8		
9.7	48	5.5	3.7		
9.2		45.6	17.5		
9.2		49.8	59.3		
8.9		59.1	51.5	K	
10	50	6.8	36.6		
9.3		10.9	13.0		
9.2		17.5	14.8		
9.3		25.1	52.6	K	
9.3		31.0	50.7		
9.3		38.1	52.4	K	
8.9		48.0	49.9	K	
10	51	20.7	59.7		
9.8		38.6	58.9		
9.4	52	1.8	8.5		
10		31.4	26.9		
9.0		34.5	15.7	M	
9.5		34.9	14.4		
9.8		41.6	47.5		
9.9		52.9	38.1		
9.3		54.1	48.2		
9.5	53	43.2	47.9		
10		55.7	10.4		
9.3	54	1.9	22.3		
9.5		14.3	1.6		
9.8		15.1	19.0		
7.7		23.3	45.4	L	
8.6		40.5	43.6	M	
9.4		47.0	2.0		
7.5	55	5.6	19.8	K	
10		7.0	56.1		
8.5		15.3	12.8	K	
9.0		17.8	8.5	M	
9.3		20.2	54.8		
8.5		28.5	26.3	K	
9.3	56	8.5	30.4		
9.2		25.6	38.0	M	
9.1		41.1	44.5	K	
10		41.4	58.4		
10		44.6	3.2		
8.8	57	5.3	57.1	M	
8.6		8.4	31.6	K	
9.5		34.7	59.4		
9.7	58	3.3	22.3		
9.9		8.8	22.3		

3021—3080

	9h—10h		−14°	
m	m	s	′	
9.4	58	15.0	45.9	
9.5		30.0	44.8	
9.8		35.4	57.8	
9.3		48.1	7.7	
9.0		52.4	6.3	
10	59	17.8	22.1	
10		21.4	30.7	
9.4		32.1	8.8	
7.8	0	20.1	45.1	
9.4		21.3	58.0	
9.4		39.6	9.9	
8.8		41.7	24.1	
9.1	1	15.2	24.6	K
9.3		20.8	57.1	
9.8		22.5	7.5	
6.5		35.7	54.2	K
9.5		55.0	7.8	
10	2	7.4	40.6	
7.5		8.4	46.5	B
9.3		14.0	40.8	
7.8		41.8	3.1	
10	3	10.1	16.5	
9.9		20.3	25.3	
9.1		31.2	54.9	K
9.3		42.5	49.0	
7.2		51.6	59.8	K
9.8	4	22.6	37.4	
10		32.6	11.0	
8.7		33.0	20.6	
9.0		39.8	42.5	
9.8		55.0	17.5	
9.4	5	2.3	30.4	
9.1		15.8	47.0	
7.0		22.3	21.3	K
8.5		38.4	59.5	B
8.8		50.4	13.3	K
9.6		54.6	0.7	
10	6	18.3	50.6	
8.3		18.4	59.0	B
9.8		47.0	21.0	
8.8		48.2	33.3	M
7.9	7	1.5	0.6	K
9.8		4.6	55.6	
9.8		10.2	1.5	
10		39.6	55.8	
8.9		54.9	14.6	M
9.0		59.0	19.6	M
9.4	8	18.6	24.0	
9.3		32.3	43.3	
10		45.1	30.7	
9.6		52.0	16.8	
9.8	9	3.1	59.2	
10		19.7	6.4	
10		51.4	58.0	
9.2		54.3	13.0	
9.3		56.3	58.5	
9.5	10	18.5	25.3	
9.6		42.9	20.2	
9.4	11	2.4	54.1	
9.8		17.4	50.8	

3081—3140

	10h		−14°		
m	m	s	′		
9.2	11	24.6	4.4		
9.5		26.0	29.3		
9.3		27.2	7.7		
9.7		35.0	13.5		
9.5		59.9	22.0		
8.2	12	4.6	36.4	K	
9.8		26.7	9.9		
9.8		28.0	2.3		
9.4		34.6	37.4		
9.6		54.4	22.0		
10	13	33.4	12.3		
9.1		33.5	15.9		
7.0		49.2	45.8	L	
10		54.9	59.0		
10	14	14.0	34.2		
9.1		18.6	7.9		
8.6		39.9	28.1	K	
9.0		42.3	55.3	M	
9.6		47.1	48.6		
9.4	15	41.4	29.7		
9.8		51.8	51.0		
9.5		58.8	40.4		
9.1	16	2.4	41.1		
9.1		4.8	55.3		
9.8		6.7	19.6		
9.5		32.5	39.5		
10		41.7	17.6		
9.8		46.8	59.9		
8.9		49.9	32.1		
10		53.1	43.3		
9.9		58.0	13.1		
9.6	17	10.9	36.1		
9.3		31.2	58.2		
9.6		49.7	20.6		
9.6		53.8	26.8		
8.3	18	19.1	17.9	K	
9.2		28.2	43.0	M	
9.1		47.1	18.8		
8.9	19	4.6	14.3	K	
10		4.9	4.6		
9.2	20	17.0	44.5		
9.3		28.1	22.0		
8.7		37.0	43.7	M	
9.8		51.1	18.7		
9.8		57.4	39.4		
9.6	21	4.3	7.0		
9.1		21.0	22.1		
9.2	22	28.5	20.4		
9.9		41.4	54.8		
10	23	1.5	55.2		
9.3		17.1	39.0		
9.6	24	5.7	40.4		
9.2		19.6	26.5		
6.8		32.3	8.8	K	
9.4		42.5	55.0		
9.4		57.4	15.2		
10	25	48.8	11.7		
8.3	26	0.4	0.6	K	
9.7		20.2	50.5		
9.5		21.9	53.8		

3141—3200

	10h		−14°	
m	m	s	′	
9.8	26	47.6	31.1	
9.4	27	4.7	40.4	
9.7		6.9	35.5	
9.9		25.0	58.7	
9.5		51.7	0.4	
8.9		59.7	9.4	K
9.3	28	11.1	53.8	
9.6		54.1	49.3	
8.9	29	7.5	29.6	
9.1		26.0	28.0	
8.4		44.3	40.0	K
10	30	37.9	47.7	
9.1		39.0	43.8	
9.4		56.5	46.4	
9.4	31	24.2	21.1	
7.5		43.8	59.0	B
9.5	32	6.1	9.8	
9.8		43.2	57.0	
9.6	33	0.3	28.1	
9.0		39.5	43.9	
8.0		43.2	27.5	K
10	34	12.9	6.5	
9.4		26.5	13.2	
8.1		34.6	55.4	B
8.7		58.0	36.6	M
9.0	36	12.5	12.1	
9.2		15.9	32.5	
10		31.4	39.4	
8.7		40.8	2.1	K
8.8	37	0.7	25.4	M
9.0		3.4	47.3	M
9.0		23.7	5.4	
10		46.9	9.6	
8.9	38	59.1	43.7	
8.5	39	8.1	22.6	K
7.5		18.0	16.2	K
10		19.8	1.9	
8.8		24.5	48.9	
8.7		33.1	44.2	
9.8		35.9	43.6	
7.2		50.5	58.5	A
9.1	40	9.9	51.1	A
9.4		17.7	37.3	
7.8		29.2	51.2	A
10		29.3	40.9	
7.0		29.5	29.7	L
9.0		30.0	51.2	A
7.5		30.7	28.4	L
7.2		33.3	20.5	L
8.5		55.5	11.8	
10	41	32.4	17.1	
9.6		51.8	47.8	
8.2		57.9	23.6	K
10	42	14.0	31.8	
9.7		57.0	24.6	
9.5		59.4	28.2	
9.8	43	11.6	14.7	
8.8		11.9	13.1	K
8.0		18.4	19.6	K
9.8		29.1	55.0	

3201—3260				3261—3320				3321—3380				3381—3440				3441—3500			
	10h	−14°			10h—11h	−14°			11h	−14°			11h	−14°			11h—12h	−14°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	43 30.0	59.1		9.1	59 36.0	43.4		8.8	18 44.6	9.2	K	9.1	34 29.1	25.6	K	9.7	52 12.3	48.6	
7.5	45.3	7.2	K	8.3	54.1	46.0	K	9.4	49.0	55.2		8.5	56.0	55.2	K	9.0	48.2	37.2	K
10	44 0.3	49.7		8.2	0 9.4	35.3	K	9.9	53.6	59.3		9.0	58.3	24.3	K	9.0	57.3	25.1	K
9.8	6.9	40.8		9.7	36.0	41.9		9.4	19 13.0	57.6		10	59.7	41.8		9.0	53 3.8	28.3	K
9.5	37.7	4.4		10	56.9	23.4		9.3	38.9	56.0		10	35 7.0	6.8		9.5	14.9	9.5	
9.6	48.8	40.8		8.6	1 21.6	46.5	K	7.5	53.3	50.6	K	9.4	13.4	35.1		9.2	16.3	21.3	
10	45 24.9	24.0		10	23.5	2.5		10	20 1.2	58.0		9.5	28.6	58.0		9.8	21.2	34.2	
10	40.0	12.1		9.1	32.0	44.5	K	9.8	46.3	31.5		7.0	36 9.9	14.2	L	9.3	54 1.2	43.1	A
9.6	50.4	41.0		9.5	41.9	50.6		9.8	52.2	40.2		10	18.4	2.9		9.8	13.4	11.9	
9.5	53.4	49.8		9.7	2 24.6	39.2		9.7	21 36.5	7.4		9.8	24.3	6.4		9.8	36.7	37.8	
9.7	57.7	1.1		10	31.1	54.4		9.6	52.9	0.0		8.4	42.4	39.1	K	9.1	44.3	53.9	A
9.8	46 8.5	32.9		9.0	33.4	18.2	M	9.0	57.9	18.7		9.8	37 17.8	49.9		9.7	55 40.6	35.4	
6.6	22.3	40.5	K	9.2	34.5	5.3		9.3	22 4.3	51.8		10	22.1	18.0		9.3	56 23.2	22.4	
9.5	34.4	29.7		9.8	57.2	5.9		9.8	17.1	15.6		9.8	28.9	3.6		8.6	39.2	28.5	
9.9	48.0	47.7		9.9	3 17.1	5.7		10	36.7	25.7		9.5	29.2	26.7		9.7	41.9	50.0	
10	47 11.3	36.7		8.8	25.7	7.5	K	10	59.3	34.8		9.4	34.8	31.5		9.1	55.2	18.2	
10	16.2	42.7		9.0	4 13.1	11.1	K	10	23 6.8	53.3		9.8	38 0.1	20.7		9.1	57 10.7	16.9	
9.5	22.1	19.4		9.7	27.9	1.5		9.0	8.0	31.5		9.8	1.5	45.4		9.5	58 15.1	17.3	
9.7	26.5	21.2		9.2	32.6	2.5	M	9.7	12.4	40.8		9.7	37.2	2.7		9.5	59 58.5	34.1	
9.7	31.7	50.9		9.3	57.9	44.9		9.1	19.6	18.3		9.8	50.8	29.8		8.3	0 9.3	3.1	K
8.6	44.8	40.6	M	9.1	5 21.0	55.1	M	10	24 21.8	6.0		10	39 1.7	32.9		9.5	38.0	30.9	
10	48 4.8	19.0		9.3	25.5	42.0		9.2	40.6	57.0		8.8	9.4	7.9	K	9.0	43.1	18.8	K
8.8	17.6	51.5		9.9	56.7	17.8		9.1	25 16.5	48.8		9.6	24.7	31.8		9.5	44.0	27.1	
9.1	17.9	29.5	B	9.3	6 5.1	11.2		10	35.1	31.7		10	46.0	5.2		9.1	44.4	42.5	
9.5	37.9	53.7		9.9	6.2	20.4		9.8	37.0	57.0		9.8	52.4	9.9		9.1	1 0.0	50.4	
9.0	51.7	15.7	K	9.0	15.3	28.6	M	9.2	51.9	0.8		8.2	40 31.3	39.4	K	9.4	35.6	49.0	
9.8	49 7.6	40.7		9.3	18.7	24.0	M	10	26 10.7	15.7		9.2	41.1	25.7		9.5	2 35.5	54.7	
9.5	9.2	55.7		8.6	30.6	12.1	K	10	18.6	36.1		9.8	41.4	50.0		8.4	47.9	36.8	K
8.4	20.7	47.6	K	8.0	49.4	38.7	K	8.0	27 1.0	42.3	K	10	47.6	29.3		8.7	3 20.5	7.6	K
8.0	38.5	7.4	K	9.7	51.7	21.3		8.8	18.4	46.1	K	9.1	52.5	23.3		9.5	49.8	33.0	
9.6	43.1	9.9		9.5	59.5	56.6		9.6	22.8	17.8		9.1	54.2	51.3		9.4	53.9	13.4	
8.5	50 7.5	57.6	K	9.1	7 37.8	26.7		9.3	25.2	1.3		9.9	41 12.3	10.1		9.4	4 9.8	17.3	
9.3	34.3	40.4		10	42.6	18.7		8.8	28 9.5	20.4		8.6	19.1	11.9		9.7	28.5	14.0	
10	41.9	50.1		9.1	45.2	3.6		10	17.5	23.8		9.0	29.0	44.7		10	53.3	35.8	
9.9	51 2.3	23.4		9.0	52.6	21.5		8.7	23.5	59.9		8.5	42 18.2	37.3	K	9.3	5 1.3	44.9	
10	52 9.3	54.6		10	9 10.5	14.4		9.3	33.6	28.7		10	51.0	39.4		8.3	2.6	39.2	K
8.2	43.3	39.1	L	8.6	53.0	18.0	K	9.0	38.6	30.3		9.6	55.2	28.6		9.8	21.4	47.4	
9.8	53 5.3	35.3		10	10 15.3	42.9		9.4	46.4	45.8	A	8.2	43 27.9	34.8	K	9.3	43.9	26.0	
9.1	42.2	34.7		10	32.4	6.4		10	48.0	59.7		9.1	44 3.4	14.4		9.0	6 38.9	42.2	
10	45.6	47.4		9.3	59.0	15.6		9.9	29 27.3	14.4		10	23.5	30.5		9.4	43.9	11.0	
10	54 14.9	57.8		9.8	11 43.3	5.6		9.8	42.4	23.3		9.8	27.2	54.1		9.8	8 19.2	36.2	
10	38.1	28.3		9.4	12 6.0	24.4		10	30 3.3	20.0		9.6	58.7	44.5		9.3	27.3	2.8	
10	51.0	42.6		9.3	26.1	14.5		10	14.3	15.1		9.4	45 19.6	20.7		9.3	9 1.3	52.0	
10	52.3	14.0		9.3	26.6	48.8		9.8	39.4	24.5		8.2	23.5	2.0	K	8.3	43.7	25.8	K
8.0	54.7	54.5	B	8.8	32.1	31.2		9.6	50.3	45.7		9.9	37.3	49.2		9.7	10 8.4	45.3	
8.7	55 8.1	45.1	L	10	13 12.3	24.7		10	52.8	12.9		9.5	40.1	56.0		8.9	32.8	8.1	K
8.9	26.9	5.2	K	9.0	37.0	2.5	K	9.4	31 19.2	9.8		8.0	50.0	52.0	B	10	44.6	25.5	
9.2	56 2.8	9.4		9.0	14 32.8	16.5		9.5	22.0	30.7		8.2	46 18.1	47.6	K	7.7	53.1	46.9	B
9.9	15.6	29.9		9.4	34.9	4.9		10	24.5	47.3		8.7	25.3	2.3		8.2	11 29.7	58.5	B
10	31.3	27.0		9.7	15 10.5	16.5		8.0	24.6	15.4	K	9.5	37.1	3.0		9.8	59.0	57.4	
10	31.8	6.2		9.8	17.2	11.0		8.5	39.3	13.8	K	9.8	47 9.6	10.0		9.5	12 16.6	34.1	
9.4	57 3.2	37.1		9.7	16 13.4	42.1		8.8	43.1	3.5	K	9.7	35.5	17.2		10	20.0	57.0	
9.6	14.9	17.6		9.1	17 0.9	30.6		9.5	45.8	15.3		9.7	48 2.9	41.2		8.0	27.7	14.9	K
10	17.4	8.0		10	10.0	51.8		9.9	53.0	52.7		9.9	40.0	13.9		8.7	53.6	1.1	K
8.5	22.8	8.5	K	10	10.7	10.2		9.1	32 2.8	5.2	K	8.6	52.8	41.6	K	8.5	13 15.0	57.0	A
9.7	48.0	22.8		9.7	26.0	53.6		9.3	22.7	1.0		9.0	49 47.3	39.4	K	9.8	44.2	19.2	
9.8	58 14.5	43.2		9.7	26.6	57.8		9.3	44.7	14.8		9.5	50 17.1	24.8		9.4	14 1.1	38.0	
10	22.6	38.8		9.4	42.5	23.4		9.2	33 30.4	35.3	K	7.5	51 9.4	18.3	K	9.6	29.3	46.5	
9.2	59 25.1	1.1		9.9	43.6	3.9		9.1	32.9	33.8	K	8.2	22.9	3.5	K	10	40.6	26.5	
9.1	34.1	20.8		9.4	45.4	24.3		10	34 20.4	53.1		9.8	44.4	3.8		6.8	48.3	44.7	K

3501—3560

	12h	−14°	
m	m s	′	
10	14 59.3	37.7	
9.3	15 7.5	40.0	
9.0	14.1	13.6	
9.8	20.0	33.2	
9.4	29.9	55.9	
9.1	50.4	54.8	A
9.9	16 9.8	16.3	
9.1	32.3	33.2	
9.1	17 4.9	42.0	A
7.0	18 29.6	8.5	K
9.8	31.9	54.1	
9.9	49.0	43.6	
9.3	19 1.7	57.6	
9.8	2.7	3.5	
8.3	3.5	10.5	K
9.1	37.2	55.0	
9.3	43.5	52.1	
9.0	20 1.3	3.1	K
9.7	10.6	57.6	
9.4	25.1	5.5	
8.2	35.4	50.6	K
9.4	52.5	21.4	
9.4	53.9	23.8	
9.0	21 3.1	57.8	
9.5	22 3.4	48.4	
9.9	7.9	34.9	
10	16.6	49.1	
10	21.9	20.7	
8.6	52.8	30.8	B
7.5	24 17.6	54.8	B
9.8	22.4	45.7	
9.2	38.8	27.9	B
10	44.9	49.2	
9.3	25 0.6	43.5	
10	29.7	44.7	
9.8	50.7	31.5	
9.5	26 10.6	35.1	
9.3	47.2	15.1	
9.2	27 11.1	28.0	
9.4	22.1	37.5	
8.5	28 50.5	36.7	
9.8	58.5	47.6	
7.3	29 18.4	46.4	K
8.3	21.9	55.3	B
9.8	25.1	45.0	
9.7	32.5	40.5	
9.8	35.5	35.0	
8.7	30 8.7	3.3	K
9.0	37.2	45.5	
9.8	49.9	43.0	
9.8	31 41.8	1.7	
9.6	32 11.5	21.5	
10	55.1	11.7	
9.4	56.0	30.0	
8.5	33 51.9	39.5	
9.6	34 25.1	9.1	
7.0	43.5	17.1	K
9.5	45.0	19.8	
7.7	50.7	26.2	K
9.8	35 13.1	52.9	

3561—3620

	12h	−14°	
m	m s	′	
8.1	35 14.8	40.0	K
9.9	31.8	36.2	
9.0	42.0	3.3	K
9.5	55.3	38.4	
10	36 2.0	41.0	
10	29.2	45.4	
9.9	31.5	10.0	
8.3	37 33.4	5.9	K
9.8	54.7	33.4	
7.9	56.2	42.4	K
10	38 14.7	15.1	
7.9	25.5	44.6	K
8.0	55.7	38.5	K
9.8	55.9	3.0	
9.5	39 23.3	22.2	
9.8	51.8	33.3	
9.8	40 9.2	42.1	
9.5	32.2	29.0	
9.1	33.0	17.5	
9.7	34.4	5.4	
7.5	55.5	55.4	A
9.4	41 6.8	9.2	
9.2	21.6	51.1	A
9.4	34.4	43.0	A
8.8	45.3	3.0	K
10	42 0.6	36.2	
6.8	11.2	17.3	K
9.8	48.3	39.6	
9.8	43 18.0	40.0	
9.1	29.4	42.6	
9.8	39.2	15.5	
8.5	51.0	32.7	K
8.9	55.1	18.0	
9.0	44 7.9	54.1	M
9.7	38.6	47.2	
7.5	45 33.2	10.7	K
9.1	46 15.5	23.4	
10	43.4	49.4	
9.8	46.0	40.7	
9.9	51.6	13.2	
9.7	47 8.6	50.3	
9.8	20.1	13.6	
9.4	58.3	49.2	
9.8	48 10.5	23.4	
6.2	16.1	32.2	K
9.5	20.2	15.8	
9.7	22.1	12.4	
7.5	50.0	9.6	K
9.4	50.4	5.5	
9.4	49 1.4	55.8	
10	5.2	31.5	
10	10.7	27.0	
8.5	11.0	19.0	K
9.5	50 18.8	53.0	
7.1	27.2	11.9	K
10	51 43.7	16.2	
9.1	52 8.8	19.4	
9.2	14.9	30.7	
8.9	39.8	28.0	K
9.5	43.3	16.4	

3621—3680

	12h—13h	−14°	
m	m s	′	
9.1	53 2.5	34.4	
9.5	53.1	0.5	
9.7	55.0	41.5	
9.5	54 14.1	35.4	
9.3	51.1	16.2	
9.0	55 16.4	34.9	
9.4	25.3	22.4	
10	29.7	40.3	
9.1	33.1	29.3	
10	33.5	50.0	
9.7	33.9	18.9	
9.2	56 32.2	53.0	WC
9.4	40.5	20.6	
9.1	42.8	59.9	A
9.8	57 13.0	0.5	
9.4	19.9	43.2	A
10	31.8	49.0	
9.9	37.2	49.3	A
9.5	37.7	30.2	
8.8	45.0	19.1	K
10	58 10.9	46.5	
9.5	20.3	5.6	
9.2	24.9	3.3	K
7.3	47.9	8.2	K
9.5	59 0.0	59.2	
10	36.0	22.1	
9.9	37.8	36.7	
9.1	0 23.0	9.1	
9.8	48.1	51.0	
8.6	52.6	32.8	K
9.1	1 1.6	34.3	K
9.5	28.0	58.2	
9.1	39.8	2.1	
10	42.8	41.0	
9.8	2 35.4	7.4	
9.5	39.5	39.0	
8.7	40.0	34.8	K
9.4	40.8	50.4	
9.5	51.1	23.6	
9.8	4 45.9	38.6	
9.8	47.0	7.0	
10	5 0.3	11.4	
10	14.4	26.3	
9.8	17.8	3.5	
7.9	34.5	41.4	K
9.7	36.1	19.7	
9.7	59.3	8.7	
8.3	6 0.9	37.2	K
9.3	9.4	39.0	
9.3	31.1	15.4	
8.6	7 8.4	14.7	K
9.5	41.7	48.5	
9.6	42.9	45.3	
9.0	56.6	12.7	
9.6	8 10.8	21.5	
10	20.7	11.8	
9.9	22.5	28.4	
9.5	9 13.2	58.0	
9.0	23.3	57.1	
9.7	33.7	45.4	

3681—3740

	13h	−14°	
m	m s	′	
8.5	9 39.3	30.2	K
9.2	43.4	41.5	
6.7	49.7	46.7	K
9.2	54.3	32.2	
9.8	10 17.0	18.3	
10	23.8	12.7	
10	27.9	0.7	
8.3	48.2	11.2	K
9.8	11 18.4	42.4	
8.6	34.9	48.3	K
9.2	12 8.0	51.5	
10	10.0	2.3	
9.4	19.7	20.9	
9.1	22.3	41.2	K
8.8	25.6	9.5	
9.3	39.6	59.8	
9.5	40.6	57.5	
8.2	57.1	0.5	L
9.3	13 8.7	33.0	
9.5	42.6	55.5	
9.8	14 12.2	34.5	
9.3	26.7	2.2	
10	36.6	38.7	
9.6	39.1	36.1	
10	49.5	14.8	
9.8	15 7.1	58.8	
9.4	17.0	59.2	A
8.4	27.1	39.2	L
7.5	32.0	9.5	K
9.9	35.0	20.7	
9.2	35.6	37.0	
9.5	51.1	55.3	
8.2	58.0	21.4	K
8.9	16 30.6	26.4	K
9.5	40.0	24.5	
9.5	17 13.1	32.1	
7.8	20.2	52.4	K
9.8	42.2	14.2	
9.1	45.0	33.2	
10	18 6.5	32.8	
9.0	31.9	1.7	K
9.9	19 10.4	12.7	
9.5	20 13.4	28.7	
9.8	14.4	45.3	
10	51.8	25.4	
9.2	21 42.9	34.7	
8.5	22 7.4	19.9	M
9.5	16.4	43.4	
10	38.9	39.6	
10	46.4	57.1	
9.6	23 21.9	45.8	
9.8	39.9	56.2	
8.4	56.3	31.8	K
9.6	24 40.4	5.9	
9.5	44.8	31.8	
9.3	52.7	59.4	
9.6	25 3.6	45.5	
9.8	3.7	30.2	
5.8	7.8	36.9	A
9.7	15.2	24.0	

3741—3800

	13h	−14°
m	m s	′
9.0	25 21.7	22.0
9.5	54.0	55.9
9.5	26 6.3	55.3
9.7	11.8	59.0
8.8	45.1	10.5
10	27 19.2	33.5
9.8	20.0	3.8
9.5	44.2	43.7
8.8	49.7	5.0
8.6	58.0	14.3
9.3	28 3.1	8.8
9.0	22.1	30.7
9.5	23.4	52.5
10	36.6	47.5
8.8	59.3	28.6
8.5	29 40.3	51.0
10	48.2	37.8
9.8	51.9	49.1
10	58.6	28.7
8.2	30 11.6	33.4
9.5	28.5	11.1
9.5	30.6	28.7
9.2	43.6	6.1
9.8	47.2	53.4
10	59.6	40.0
9.4	31 32.2	55.5
7.3	34.0	27.9
8.0	48.3	52.3
9.5	56.4	48.0
9.5	32 13.9	56.0
9.3	56.5	4.8
9.5	33 1.0	35.1
9.3	5.7	42.0
9.8	25.1	42.1
9.8	38.6	43.2
10	55.6	22.0
10	34 2.9	27.8
9.3	17.4	23.1
10	39.4	26.3
9.6	48.9	49.1
8.8	58.9	18.1
9.8	35 3.3	7.8
8.2	7.8	18.0
9.5	16.9	23.0
9.8	58.4	9.8
9.0	36 14.9	10.8
7.5	34.3	1.
9.4	36.4	36.
10	39.4	39.
9.4	37 9.8	22.
9.1	12.0	53.
8.0	22.6	1.
9.5	38 7.0	54.
9.5	20.5	55.
9.4	21.3	27.
10	26.2	16.
9.0	52.3	22.
9.5	56.5	53.
9.5	39 30.8	10.
9.6	40.8	25.

3616: neb GC 3337

3801—3860				3861—3920				3921—3980				3981—4040				4041—4100			
	13h	−14°			13h—14h	−14°			14h	−14°			14h	−14°			14h	−14°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	39 56.0	52.5		8.5	56 16.1	47.0	K	9.8	11 18.4	1.7		10	25 54.5	49.9		9.4	42 26.2	12.6	
9.6	40 12.3	38.6		9.1	35.7	15.0		8.8	19.7	34.0	K	9.8	26 4.7	44.2		9.8	33.5	57.7	
9.6	38.9	52.9		6.5	37.2	16.6	K	9.6	50.3	9.8		9.5	30.5	9.6		9.8	41.8	48.1	
10	43.7	17.0		9.3	39.0	54.2		9.1	12 16.4	50.5		9.5	56.0	9.9	M	9.7	51.0	39.7	
10	41 3.2	22.6		10	57 12.0	46.3		9.8	24.8	5.0		9.8	27 13.6	3.7		7.5	43 4.5	25.8	K
8.3	6.1	0.1	K	8.9	22.9	24.9	M	9.3	25.5	43.3	M	9.3	33.4	47.7		10	6.0	36.6	
9.7	21.2	30.8		7.5	23.2	9.0	K	9.8	49.9	1.5		9.8	28 12.9	54.0		9.4	6.7	2.6	
8.2	33.2	2.0	K	9.1	57.1	32.7	M	9.3	13 35.7	33.2		9.1	21.5	22.1		9.4	11.0	53.5	
9.8	42.4	44.9		9.3	58 10.9	55.2		9.5	36.2	13.1		9.7	41.9	0.2		10	18.8	37.4	
9.4	42 6.8	30.6		9.2	23.1	33.9	M	9.4	55.8	31.3		9.8	55.0	21.7		8.2	35.0	20.1	K
9.0	9.6	10.9		9.3	33.1	29.8	M	9.6	14 17.7	4.4		9.8	56.4	48.5		9.0	47.6	23.9	K
9.8	53.0	5.0		9.3	38.4	48.9	WC	9.4	19.4	46.7		9.4	29 0.8	2.3		8.2	50.0	37.5	K
9.5	43 15.9	11.8		9.8	40.8	44.4		9.5	20.2	43.3		9.2	11.4	53.0		9.5	44 4.7	0.8	
9.3	36.1	32.4		9.3	47.0	50.1	WC	9.5	27.6	53.1		9.5	44.5	7.6		9.3	20.5	52.4	
8.7	55.3	45.0	A	9.9	59 18.7	33.1		9.8	37.1	55.4		10	58.2	46.7		7.7	31.4	47.4	K
9.5	57.6	17.0		10	27.0	3.8		9.8	53.6	52.3		8.5	30 15.0	19.5	K	10	34.1	7.2	
9.5	44 4.8	6.2		10	43.6	28.5		9.8	55.1	36.1		9.3	36.0	8.2		9.5	55.0	21.7	
9.2	13.1	39.0		10	46.8	15.9		10	56.1	33.9		9.8	36.3	12.8		9.9	45 5.1	21.7	
9.6	24.7	35.8		9.8	52.6	27.4		10	59.1	59.9		9.6	39.4	59.2		9.5	25.0	45.0	
9.0	29.6	26.2	M	8.6	0 4.1	34.5	K	10	15 25.0	3.2		9.8	43.4	25.7		10	31.3	22.2	
9.4	55.1	58.8		9.5	38.0	27.2		9.5	27.5	38.2		9.8	46.3	58.0		9.8	43.4	38.7	
9.0	45 17.5	1.4		9.5	43.9	50.2		10	32.2	5.0		9.0	31 21.5	2.3	M	9.5	59.6	12.5	
9.3	46 6.6	37.4		9.6	1 15.8	52.6		9.1	52.6	35.0		8.5	32 12.4	38.5	M	9.8	46 7.5	35.6	
10	17.0	18.0		9.7	18.7	5.5		8.8	57.4	17.7		9.5	26.1	40.0		9.1	17.9	50.0	
8.5	20.8	24.7	B	9.2	32.8	53.7		9.5	16 12.5	56.7		9.8	33.6	1.7		9.5	20.4	30.2	
9.3	36.2	59.7		9.3	41.8	4.2		9.7	21.4	1.4		8.2	55.7	41.7	K	9.6	44.6	13.4	
8.3	47 14.9	48.1	A	9.7	48.0	52.6		9.5	33.5	4.5		9.6	33 1.4	8.8		9.4	47 9.6	42.6	M
10	32.2	46.3		9.2	2 16.5	34.1	M	8.0	36.7	8.1	L	9.4	17.8	52.5		9.6	14.3	39.2	
10	42.0	37.0		9.5	27.9	41.2		8.0	44.7	3.0	B	9.5	34 41.0	31.3		8.2	31.6	45.0	K
8.0	59.4	4.6	K	10	36.6	11.3		9.3	57.2	9.2		9.8	52.9	46.8		8.6	34.6	8.5	
9.8	48 11.3	42.1		9.0	57.2	7.0		8.8	17 13.0	3.0	K	9.3	35 31.2	39.0		9.5	48 30.4	54.1	
9.5	11.5	22.0		9.2	3 0.0	30.5	M	9.4	16.1	11.4		9.6	43.7	27.2		10	56.5	5.3	
9.1	58.1	55.4	M	8.5	20.4	31.5	M	9.8	18 16.6	16.5		10	36 3.8	8.2		9.1	56.9	27.8	M
9.8	59.1	47.4		9.8	45.8	53.8		9.5	31.5	27.8		9.9	15.1	24.7		9.4	49 13.8	37.0	
10	49 0.3	44.3		9.8	57.5	55.7		9.5	32.0	1.2		9.5	36.9	13.8		9.6	17.7	5.6	
10	13.0	21.8		9.0	4 5.4	36.0		9.9	38.1	14.1		10	40.9	16.2		9.8	21.4	47.1	
9.1	50 15.8	12.2		9.0	15.1	38.9	M	9.2	19 9.9	25.5		9.6	49.9	30.6		9.0	28.0	19.2	
9.5	40.2	44.8		9.8	38.0	10.6		8.8	20.3	38.8		9.2	54.3	15.3		9.6	32.9	29.7	
9.5	41.9	33.9		9.3	5 4.0	0.7		7.0	27.6	11.1	K	9.9	37 7.6	5.1		9.4	57.3	36.2	
9.5	51.6	1.4		8.3	19.1	56.7	A	9.4	41.2	30.2		9.8	21.8	47.8		9.6	50 41.3	22.5	
9.8	51 2.7	51.5		9.0	21.0	55.8	A	9.2	20 9.5	22.5		9.0	26.7	53.4	A	9.8	41.9	11.9	
9.8	10.9	15.5		9.3	6 28.8	40.0		9.5	15.0	35.7		8.5	52.8	22.7	K	8.1	50.8	51.1	K
9.5	34.4	11.3		9.5	55.9	39.4		9.7	42.8	31.7		6.2	58.2	50.6	K	9.2	51 23.6	55.4	
9.3	46.1	58.1		9.1	7 9.5	13.0		8.2	21 16.5	44.4	L	9.8	38 1.3	18.5		10	52 9.3	22.0	
9.0	49.8	38.9		9.7	16.0	51.9		8.8	35.9	22.1	K	9.6	20.1	37.0		8.4	13.4	9.0	K
7.8	52 38.9	14.4	K	10	18.5	13.8		9.8	54.3	32.1		10	30.2	47.6		9.0	25.7	51.5	
9.5	49.0	42.3		9.3	36.9	7.8		10	22 11.9	53.6		9.0	35.9	27.5	K	8.3	54.2	26.8	K
9.6	53 13.5	58.8		9.7	45.3	29.7		7.3	18.3	36.1	K	9.5	40 1.3	6.5		9.8	53 4.3	57.3	
9.0	21.4	9.4	K	9.8	52.8	30.1		9.7	23 17.9	45.5		9.7	9.4	49.8		9.8	8.3	24.6	
9.9	40.6	47.1		8.0	56.4	25.9	K	8.0	20.4	58.9	B	9.8	20.3	54.9		10	28.9	16.9	
9.5	40.9	37.9		9.8	59.9	32.5		10	24 0.9	9.8		8.8	25.5	36.8	K	9.1	52.8	12.5	
9.3	43.3	41.2		9.8	8 8.3	36.2		9.8	3.9	41.3		10	33.3	50.9		9.5	54 1.3	17.5	
9.8	54 15.1	53.2		10	21.0	27.9		8.9	24.7	45.3	K	9.7	51.8	48.6		8.7	21.1	33.6	K
9.4	16.0	56.6		9.8	9 46.4	48.5		9.6	29.4	16.9		9.3	41 0.6	6.2		10	30.7	38.7	
10	55 4.1	3.3		9.1	10 2.2	3.4		9.4	33.7	44.6		9.2	17.1	38.1	K	8.7	39.1	13.3	K
9.9	6.0	55.9		9.6	7.3	35.4		9.5	25 8.9	21.9		8.7	18.3	44.1	K	8.2	44.8	28.2	K
9.4	27.2	40.5		8.5	7.3	1.9	K	10	9.9	2.5		10	23.8	28.8		9.6	55 38.6	25.4	
10	33.8	33.5		8.0	13.1	14.2	K	8.8	32.3	21.7		8.9	42 2.4	45.4		9.5	40.2	27.1	
9.9	36.2	16.0		9.2	15.9	16.9		9.2	42.7	28.0		7.0	5.6	55.0	K	9.4	52.3	7.3	
8.9	56 9.2	19.7	K	9.8	11 13.9	50.5		10	49.9	39.7		8.0	16.7	44.4	K	9.5	52.7	42.5	

3970: 20:61 58′44″3 B_4, Ep. 1873.15

4101—4160

m	14h—15h m	s	—14° ′	
9.1	55	59.1	31.8	K
7.8	56	7.1	53.3	K
9.4		7.1	45.3	
9.5		10.0	36.3	
8.0		11.2	55.6	K
9.3		12.5	43.7	
9.2		21.4	28.7	K
10		26.5	44.3	
8.0		42.7	25.7	K
9.1		54.8	8.9	
9.8	57	20.9	30.1	
9.8		21.2	35.3	
9.6		22.5	10.9	
10		32.7	39.1	
9.2		50.1	45.9	
9.8	58	10.2	45.3	
10		35.2	42.7	
9.0		56.2	5.8	
8.4	59	6.0	3.2	K
7.7		22.5	51.3	K
8.0		24.7	6.9	K
9.5		54.6	33.2	
7.8		57.6	1.7	K
9.5	0	26.5	56.6	
9.3		31.8	51.2	
9.3		47.7	18.6	
9.4	1	24.9	5.0	
9.5		25.0	26.4	
9.1		25.6	40.0	
9.2		29.2	3.8	
9.8		42.0	42.3	
9.1		49.6	10.1	
9.6		51.6	19.1	
9.8	2	0.4	33.8	
9.7		7.1	8.0	
10		19.0	52.7	
10		43.6	8.5	
9.5		48.5	27.7	
9.1	3	31.3	10.6	K
8.8		44.5	40.8	K
9.5		58.0	24.3	
9.4	4	2.0	35.4	
10		10.4	34.9	
9.4		13.6	32.5	
8.3		22.2	1.4	K
9.9		28.1	15.0	
7.9		40.7	8.8	B
9.5		45.0	34.6	
9.4		55.6	7.6	
10	5	9.5	20.0	
9.1		37.6	14.2	
9.9		59.9	35.0	
9.4	6	18.6	53.1	
9.9		43.4	41.8	
8.8	7	4.5	36.7	K
9.3		18.3	55.8	K
9.5		27.4	31.5	M
9.4		29.8	7.6	
10		40.5	17.1	
8.2		42.8	9.0	K

4161—4220

m	15h m	s	—14° ′	
9.0	8	1.9	29.7	K
9.8		7.4	58.5	
9.4		13.4	22.0	
9.9		41.8	15.8	
8.7		57.3	3.6	K
10	9	7.5	1.4	
9.3		39.8	44.3	K
9.0		55.9	38.1	K
9.8	10	9.4	1.0	
9.5		33.3	30.5	
9.0		56.3	21.5	K
9.5	11	16.7	20.6	
10		37.0	34.4	
9.6		43.5	3.7	
8.6		47.1	49.3	A
9.6	12	9.2	9.9	
9.4		14.4	39.5	
9.5		22.4	38.2	
9.5		25.2	51.7	
7.5		34.2	12.6	K
10		48.8	20.4	
7.3		52.2	50.6	K
9.8	13	27.2	20.0	
8.2		45.3	37.9	K
9.0		55.7	33.2	K
9.1	14	32.7	21.4	K
9.5		56.1	53.5	
6.3		57.3	36.3	K
9.8	15	8.1	8.2	
9.4		18.3	38.7	K
10		24.0	39.5	
9.5		59.8	3.1	
8.7	16	0.1	52.5	K
9.1		13.1	10.2	M
9.4		35.7	26.5	
9.3		54.7	41.8	
9.8	17	17.6	22.3	
9.5		18.5	58.2	
8.3		30.6	55.8	K
9.2	18	3.8	48.5	K
9.6		33.6	43.4	
10		34.3	56.1	
9.5		54.3	44.1	
9.6		59.8	45.9	
9.4	19	1.8	36.9	
9.4		32.0	52.4	
8.9		37.0	54.3	B
7.3		37.7	26.6	M
9.1	20	23.0	14.1	
9.5		23.0	43.3	
10		27.0	54.5	
9.1		32.9	45.8	M
9.1		54.2	36.4	M
9.4		55.0	13.3	
9.8	21	27.2	47.3	
9.6		32.6	0.8	
10		49.1	6.3	
8.5		53.2	18.3	K
9.3	22	47.1	3.9	M
9.4		55.2	7.5	

4221—4280

m	15h m	s	—14° ′	
10	23	9.5	42.4	
9.4		14.2	44.8	
9.5		48.7	35.1	
9.6		57.3	40.7	
9.4	24	11.8	30.5	
9.5		16.7	4.8	
8.7		57.8	54.3	M
9.4	25	10.3	50.0	
8.6		37.7	25.7	K
9.1		43.6	11.9	
9.5		53.4	37.7	
8.3	26	0.4	22.2	K
9.7		9.5	2.2	
9.2		11.2	58.9	
9.3		31.1	9.1	
9.8		38.0	57.9	
4.0	27	25.6	18.1	K
9.4		27.1	19.3	
9.5		38.0	16.3	
9.8		55.6	20.3	
9.4	28	32.1	17.6	
9.5		50.0	30.6	
9.5	29	8.9	10.2	
9.3		15.6	7.7	
8.6		28.1	15.1	K
10		40.5	46.7	
7.5		55.0	2.8	K
9.5	30	5.2	34.1	
9.0		16.7	43.7	
7.0		24.3	1.9	K
9.5	31	5.1	18.1	
9.5		17.5	19.1	
10		35.8	22.5	
9.4		36.5	26.1	
9.2		52.4	48.0	M
9.2	32	12.9	3.2	
9.5		13.3	29.8	
9.2		32.1	2.0	
9.5		38.9	36.5	
8.8		55.2	21.2	M
9.4	33	7.7	29.4	
9.5	34	18.9	37.6	
9.6		35.1	41.1	
9.4		39.7	21.9	
9.8	35	16.0	0.4	
6.7		18.3	34.5	B
9.3		29.0	49.1	
10	36	8.2	19.0	
10		24.3	37.2	
8.3		51.5	42.7	B
9.5		59.3	48.4	
9.7	37	33.6	15.4	
9.5		35.8	35.9	
9.1		37.6	15.0	
9.4		43.8	46.6	
10	38	13.1	9.3	
8.3		58.6	46.6	K
9.0	39	27.6	10.6	K
9.1		32.0	9.6	K
9.8		38.0	8.8	

4281—4340

m	15h m	s	—14° ′	
9.8	39	52.8	50.3	
9.5	40	16.5	43.9	
9.4		21.6	19.4	
9.3		47.8	58.3	M
9.4	41	7.2	30.2	
8.7		28.9	5.7	K
9.6		33.0	12.5	
9.1		39.1	22.4	K
9.6	42	17.0	18.4	
9.0	43	28.0	19.7	M
8.0		30.0	25.6	K
9.5		44.4	7.2	
8.5		51.0	11.7	K
9.0	44	2.5	14.5	
9.6		3.5	12.8	
9.8		15.9	42.4	
9.4		50.0	33.1	
7.8	45	10.5	16.5	K
9.7		23.7	46.0	
9.0		56.0	16.9	
9.8		57.0	14.2	
9.5		59.1	32.6	
9.4	46	4.7	3.4	
9.6		6.4	45.2	
9.4		35.5	23.9	
9.4		42.4	11.2	
9.6	47	4.4	1.9	
9.5		5.4	3.8	
9.2		17.3	36.6	M
9.4		30.0	35.0	
9.0		32.6	35.6	M
8.0		36.4	43.5	A
9.1	48	18.4	21.5	
6.7		24.5	24.1	B
9.4		40.1	3.2	
9.3		47.0	54.7	K
9.2		58.6	45.6	
9.5	49	23.6	49.8	
9.5		30.2	3.8	
10		50.0	34.2	
8.3	50	0.7	2.0	K
9.3		11.0	26.2	
8.7		23.1	49.1	M
9.5	51	35.4	12.0	
9.5		42.6	41.6	
9.5		51.4	40.7	
9.5		58.0	3.8	
9.3		58.6	15.3	
7.7	52	54.7	0.5	B
9.5	53	2.9	29.3	
9.4		16.0	45.9	
9.5		19.6	21.2	
9.8		19.8	12.1	
9.0		25.6	48.5	K
9.7	54	15.4	53.2	
9.4		34.8	56.8	
9.5		41.3	9.0	
9.7	55	12.9	28.9	
8.7		39.6	42.7	K
9.8		43.2	34.3	

4341—4400

m	15h—16h m	s	—14° ′	
8.5	56	32.8	30.8	K
9.5		36.3	21.5	
8.7	57	3.3	41.4	K
9.3		21.2	6.2	
9.5		22.0	32.0	
9.8		49.8	29.2	
9.7		58.6	42.7	
9.5	58	14.2	52.0	
9.3		14.6	50.0	
9.9	59	9.1	0.2	
8.8		16.2	21.9	M
10		33.0	3.2	
9.5		36.9	39.2	
9.1		40.2	4.6	
9.8		46.2	14.4	
8.6		49.3	28.5	M
9.5	0	5.7	2.5	
9.3		19.1	39.0	
9.5		52.0	54.8	
9.9	1	35.6	13.2	
9.5		38.5	33.8	
8.3	2	49.8	0.0	K
9.2	3	46.7	32.7	
9.0	4	9.2	26.4	
8.9		15.4	25.1	K
9.8		29.6	22.2	
9.4		33.1	26.0	
8.8		37.8	57.8	
9.5		49.8	57.6	
7.4	5	0.1	44.3	K
9.5		2.2	49.7	
9.8		16.0	45.7	
9.6		23.3	51.2	
9.3		29.2	26.0	
9.8	6	3.7	4.4	
9.6		10.5	1.7	
9.4		31.1	17.5	
9.5		42.2	29.9	
8.0		49.1	16.0	K
9.5	7	6.6	20.3	
9.5		22.8	44.8	
9.8		24.3	4.8	
6.3		40.4	28.8	K
9.2		54.1	30.8	
9.5		55.1	26.7	
9.3	8	45.0	6.4	
10		59.3	59.2	
8.8	9	1.2	41.7	
7.8		9.2	57.5	K
9.4		11.0	17.6	
9.6		52.1	24.7	
9.8		54.2	49.2	
9.8	10	3.0	15.4	
9.5		16.5	13.4	
9.5		24.7	47.0	
9.3		28.4	8.0	
10		49.0	16.6	
6.3		50.0	30.6	K
9.3	11	35.3	29.8	
9.8		38.7	8.0	

4401—4460				4461—4520				4521—4580				4581—4640				4641—4700			
	16h	—14°			16h	—14°			16h—17h	—14°			17h	—14°			17h	—14°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.4	11 41.6	17.1	M	9.3	29 52.1	24.7		9.6	52 48.1	7.0		9.2	6 31.4	0.0		9.4	18 9.0	43.2	
9.7	13 4.1	3.2		10	55.3	17.7		9.2	53 39.5	31.0		8.9	35.1	6.2		9.4	22.9	27.4	
9.7	10.2	13.2		8.1	30 5.5	23.0	K	9.7	59.4	7.2		9.2	38.9	33.3		9.8	27.1	53.4	
9.6	20.4	43.5		9.6	7.4	17.6		9.3	54 4.2	54.0		8.1	59.0	15.3	K	8.0	28.0	59.7	K
10	39.7	27.7		9.2	12.7	26.6		9.7	11.7	38.2		6.4	7 5.4	24.8	M	9.5	30.7	4.4	
9.8	14 0.0	53.5		9.2	52.1	9.0		9.5	39.1	57.0		9.1	12.0	54.8		9.5	33.5	20.7	
9.4	2.9	57.1		8.5	31 12.2	37.8	M	8.8	55 16.0	24.4	M	9.6	14.4	0.0		9.3	36.1	9.8	
9.6	7.2	24.2		9.5	13.2	30.7		8.3	38.4	4.7	M	9.4	48.0	55.3		10	50.0	21.8	
9.4	15 5.4	1.9		8.8	53.1	20.6		9.9	46.7	26.1		9.8	52.7	55.1		9.8	52.4	36.5	
9.2	9.3	28.0	M	8.7	32 56.6	52.6	M	9.8	46.7	58.0		9.3	57.5	46.2		8.3	19 44.3	8.5	K
8.9	10.8	22.1	M	9.1	59.2	27.3		8.6	51.1	43.3		9.5	8 0.8	47.3		9.4	20 17.1	52.4	
9.6	16.9	41.7		9.0	33 22.0	9.5		9.2	56 1.5	20.9		8.8	46.7	5.7	M	9.4	19.0	1.6	
9.8	31.2	42.1		9.5	37.1	27.5		9.5	14.0	41.0		9.2	47.6	56.5		9.2	35.5	18.6	
9.5	39.7	24.5		9.5	34 41.2	57.4		9.7	20.6	31.2		9.6	9 3.1	52.6		9.9	39.5	15.0	
9.9	46.8	46.0		8.2	35 10.2	35.4	M	8.3	23.2	21.5	M	9.5	38.0	54.0		9.2	42.7	5.3	
10	16 4.3	28.8		8.0	24.2	58.3	A	9.5	35.7	11.1		9.5	53.4	27.5		10	53.6	53.2	
8.6	9.9	43.7	A	9.7	36 25.8	29.8		9.3	47.4	28.8		9.5	54.4	28.9		9.3	21 3.7	23.0	
9.4	13.8	48.6		9.8	58.1	34.4		8.2	50.8	30.7	K	8.5	58.3	37.5	K	8.5	5.0	8.3	K
9.8	56.3	0.2		9.3	37 7.1	10.2		10	57 10.4	19.1		9.4	10 6.7	3.8		10	14.0	52.5	
9.8	17 27.3	2.0		9.2	14.5	25.8		8.6	33.7	9.8	M	9.6	9.6	52.4		9.2	16.6	53.3	
10	47.6	51.7		9.6	34.1	25.3		9.4	38.3	14.9		8.9	16.1	45.1		9.1	43.3	3.8	
9.5	51.7	44.5		9.5	35.0	29.7		8.8	49.0	8.2	M	8.9	37.5	50.2		8.9	43.9	26.4	
10	18 17.0	20.2		9.7	39 15.6	37.8		9.8	49.5	32.0		9.9	49.4	26.8		9.5	22 5.8	30.7	
9.5	39.3	48.4		8.7	17.2	21.8		9.8	50.9	41.7		9.5	11 22.0	14.3		9.8	11.8	47.5	
8.9	19 40.7	43.7		9.4	50.7	28.5		9.5	58 11.1	59.4		9.5	27.4	24.2		8.0	15.7	39.1	K
9.7	20 22.6	0.8		6.1	40 13.6	38.5	K	9.5	18.8	49.5		9.5	28.6	32.2		9.8	22.7	38.2	
10	26.3	49.2		9.6	15.7	47.9		9.8	19.3	35.9		9.8	31.3	40.1		8.5	26.4	17.5	K
8.3	55.3	21.5	M	10	41.5	19.8		9.6	33.9	14.6		10	49.4	30.4		9.4	40.3	28.2	
9.4	21 0.6	35.5		9.1	41 33.6	17.8		9.6	35.1	48.1		9.8	56.5	46.8		9.5	42.5	57.8	
8.6	12.4	45.4		9.2	50.2	36.4		8.5	59 35.6	29.7	K	9.5	12 3.1	32.5		8.8	52.9	14.7	K
8.5	28.6	16.1	M	9.7	58.2	22.3		9.0	58.0	3.1		9.8	5.5	21.2		9.8	23 11.1	5.8	
9.8	28.8	40.5		7.2	43 50.5	33.3	K	9.3	0 14.9	15.2		9.3	12.6	50.0		9.4	29.6	1.3	
5.5	35.5	13.7	K	9.7	57.4	29.3		9.8	30.3	2.4		9.5	28.9	23.8		9.3	31.3	24.2	
8.3	22 20.5	13.5	L	8.1	44 1.9	7.2	M	9.5	48.9	17.8		9.6	30.8	47.1		9.4	24 21.6	1.7	
8.5	23.5	53.8		9.0	35.9	6.5		8.9	54.6	5.1		8.3	31.4	0.6	M	9.4	28.8	43.0	
9.1	28.5	12.7		9.5	45 17.4	39.0		9.3	58.2	9.0		9.5	13 3.1	39.5		9.5	32.7	53.3	
9.0	38.5	27.8		9.3	46 0.5	0.0		9.5	1 27.1	41.3		9.5	26.1	38.5		8.0	33.0	40.9	K
9.3	55.8	8.4		8.3	5.5	6.9	K	9.4	31.0	5.2		9.8	26.4	27.5		9.1	34.3	44.3	A
9.4	23 56.4	19.9		8.8	19.2	20.6	M	9.5	49.8	35.2		8.5	39.4	54.2	K	9.4	54.1	47.1	
9.9	24 52.0	23.6		9.1	32.3	56.8		9.2	52.8	47.0		8.8	46.5	10.0	K	9.5	55.0	27.5	
9.8	25 17.3	26.6		9.5	57.9	47.9		9.4	53.7	21.3		9.5	14 1.0	10.3		9.5	58.0	30.2	
8.8	26.5	59.3		9.5	47 28.2	40.4		9.7	2 42.1	33.2		9.4	27.7	48.1		8.3	25 27.1	18.8	K
8.3	26.6	42.5	M	9.8	48 7.8	52.1		9.2	54.0	49.1		9.8	15 38.5	15.9		9.0	27.2	58.2	A
7.2	40.2	9.5	K	9.0	27.3	30.3		9.4	3 20.1	46.9		9.1	43.0	7.7		9.5	31.4	21.7	
8.2	26 3.8	25.6	K	9.5	49 20.7	55.2		6.8	44.5	26.2	K	9.4	16 9.6	11.7		9.5	36.0	25.9	
9.5	9.8	53.2		9.1	46.9	36.4	M	9.7	44.7	48.1		9.4	44.7	42.4		9.7	42.3	41.9	
9.5	10.0	1.4		6.9	55.8	8.8	K	9.7	57.9	36.4		9.5	48.0	58.0		9.7	49.0	53.1	
9.5	27 1.2	14.9		8.8	50 10.7	32.4		8.0	4 18.8	58.8	K	9.9	49.3	45.0		9.8	26 14.4	13.5	
9.6	6.7	7.0		6.2	27.3	38.6	K	9.4	20.1	43.5		9.1	50.4	28.3	M	9.2	53.2	34.8	
10	8.7	53.3		8.4	43.9	47.8	K	9.4	26.8	1.7		9.5	57.6	8.0		9.2	58.9	8.0	
9.8	17.2	35.9		10	58.0	40.8		8.9	43.9	9.3		9.9	59.1	49.0		8.5	27 3.1	15.1	M
9.0	39.4	46.7		8.6	51 7.1	30.5	M	9.0	47.5	39.0		9.4	17 4.4	47.0		9.1	14.8	39.0	
10	28 2.7	27.1		9.7	10.4	33.1		10	5 7.2	48.7		9.3	7.3	57.8		7.5	28.2	32.8	M
9.3	5.4	51.8		9.7	35.0	14.9		10	15.4	49.6		9.3	13.8	39.9		9.4	38.4	6.7	
7.8	10.4	20.4	K	9.5	51.3	3.6		9.3	43.4	1.6		9.4	17.1	47.7		9.1	44.3	46.3	
9.8	57.9	6.2		9.3	53.4	27.6		9.5	50.6	21.5		9.8	17.6	51.5		8.8	28 30.8	24.5	
9.5	59.5	2.5		9.8	54.7	26.8		9.1	52.1	9.5		9.5	32.4	23.5		8.4	35.3	41.2	M
9.5	29 37.8	14.7		9.5	52 26.2	43.8		10	6 0.4	16.7		9.1	34.5	50.5		9.5	53.2	49.6	
9.5	42.2	2.2		9.5	37.0	18.2		9.7	5.1	48.3		8.5	58.8	33.6	K	8.8	55.9	12.5	K
9.1	48.3	19.8	M	9.5	45.1	10.8		9.8	17.9	32.4		9.5	18 4.2	0.7		10	29 5.1	1.9	

4535: 22ˢ31 21′48″5 B_1, Ep. 1881.50

4701—4760				4761—4820				4821—4880				4881—4940				4941—5000			
	17h	—14°			17h	—14°			17h	—14°			17h—18h	—14°			18h	—14	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	29 5.9	58.9		9.5	38 7.4	21.5		9.3	47 26.2	48.7		9.1	57 51.7	8.1	K	9.2	5 44.7	41.	
9.4	10.7	32.1		8.3	17.0	41.6	M	9.9	26.7	32.1		8.9	58 3.8	7.6		9.7	52.0	39.	
9.4	33.8	2.2		9.0	19.3	43.0		9.3	42.7	45.7		9.3	5.6	56.8		9.5	56.1	42.	
9.4	47.2	35.5		9.2	23.5	14.6		8.8	43.3	20.6	K	7.5	16.5	58.5	A	9.4	6 6.5	2.	
9.2	30 0.4	57.1		9.6	24.0	17.0		9.6	48 4.8	58.6		8.8	19.4	43.8	M	9.6	16.3	43.	
9.4	8.4	55.2		9.5	28.8	29.7		9.4	12.6	37.1		9.4	29.6	27.0		9.2	33.6	54.	
7.8	10.3	1.1	M	9.6	56.6	6.3		9.5	32.9	57.1		8.9	46.5	24.2	M	9.3	49.1	22.	
9.4	10.9	58.7		8.9	39 1.9	14.3	K	8.5	56.7	30.2	K	9.2	49.0	6.9		9.6	55.0	29.	
9.1	15.1	29.6	K	9.8	14.6	49.5		10	49 20.6	47.9		9.5	55.5	29.8		10	7 0.5	46.	
9.0	15.8	37.0	K	6.2	20.8	40.2	K	9.5	20.7	49.4		9.4	59 5.1	22.7		9.8	10.5	36.	
9.5	18.1	43.6		9.8	40.0	50.2		9.7	32.2	51.6		9.8	9.5	50.3		10	14.0	55.	
9.7	44.6	45.0		9.1	44.3	31.7		9.8	50 14.4	37.5		8.5	11.8	4.8	K	9.6	20.8	3.	
10	58.4	9.9		10	55.5	52.7		9.0	20.2	42.0	K	9.4	31.5	30.3		9.3	26.3	46.	
9.1	31 5.9	57.1		10	59.0	55.0		9.8	21.0	31.2		8.7	35.2	17.9	K	9.1	27.1	22.	
8.5	6.8	34.5	K	9.6	40 18.6	0.7		9.2	40.2	5.6		8.2	39.1	17.3	K	8.3	45.5	58.	
9.4	14.0	12.6		9.5	58.9	15.8		8.9	43.1	51.8		10	41.5	4.0		9.0	47.2	20.	
8.9	33.8	24.2	K	10	41 17.7	29.7		9.8	45.9	57.1		9.1	44.0	1.1		9.3	54.7	39.	
9.8	38.4	10.3		10	22.6	35.6		8.9	51 6.3	22.0		9.2	44.2	44.7		9.4	56.4	41.	
9.5	52.0	43.0		9.6	39.4	59.9		8.5	20.8	10.2		9.8	57.1	48.7		8.6	59.0	41.	
9.9	32 1.7	39.9		8.0	53.9	11.3	K	9.5	27.0	20.4		9.9	0 10.1	47.2		9.4	8 1.6	59.	
9.3	15.9	8.2		9.2	57.5	14.2		9.0	44.7	29.3		9.1	27.0	48.5		9.4	12.1	29.	
9.9	34.6	45.4		10	58.3	12.2		7.6	53.2	46.6	M	9.5	38.7	16.9		8.5	13.7	17.	
9.6	36.8	12.5		9.1	42 2.0	54.1		9.4	52 0.2	0.2		9.2	52.6	37.9		9.7	21.2	20.	
8.5	39.5	10.2	K	8.9	2.9	17.3		9.2	4.3	50.6		8.8	53.5	0.7		9.0	21.8	42.	
10	40.9	18.9		9.5	5.6	44.5		8.5	6.4	11.5	M	9.8	1 3.0	5.3		9.0	37.0	31.	
8.8	33 13.9	22.8		9.5	21.5	31.4		9.5	21.6	52.6		9.0	12.0	41.4		9.4	43.7	42.	
8.9	18.2	53.1	A	9.4	22.4	15.0		10	21.8	58.8		9.0	25.6	53.4	K	9.3	53.6	20.	
10	25.5	38.9		8.8	24.9	17.0	M	9.1	49.8	18.5		8.8	32.3	12.5		9.5	9 4.6	54.	
9.6	30.0	37.7		10	43.9	48.7		9.6	55.2	1.6		9.7	57.2	13.4		8.0	9.6	53.	
9.5	38.4	9.0		9.1	43 13.7	41.2		9.7	53 9.1	32.5		8.8	59.8	11.1		9.2	14.6	5.	
10	39.8	23.7		9.2	13.7	14.1		9.1	9.4	29.4		9.6	2 5.1	18.2		8.8	16.1	30.	
9.2	42.6	3.9		8.8	17.0	14.2	K	9.4	10.0	49.4		9.4	10.0	59.8		9.4	17.7	18.	
8.9	49.9	16.5		9.7	17.3	11.3		9.2	11.7	29.6		9.7	36.5	28.4		9.3	28.8	58.	
8.2	34 3.4	55.4	A	9.0	27.0	40.3		9.5	12.5	45.7		7.8	40.7	45.0	K	9.6	32.1	18.	
9.6	41.7	34.8		9.5	30.4	20.0		9.5	33.3	20.1		9.8	44.2	15.0		9.0	35.5	7.	
10	47.0	57.4		9.1	33.8	29.1		9.2	41.2	23.2	K	9.6	46.6	15.9		9.0	38.3	30.	
8.7	57.6	55.8	A	8.2	46.9	59.1	K	9.2	44.1	41.4		9.7	47.7	1.1		9.6	48.2	32.	
9.8	35 4.8	53.1		9.1	49.6	37.2		9.5	44.1	35.7		8.5	58.6	26.9	K	9.4	52.7	45.	
9.0	12.6	53.1	A	9.9	44 16.9	9.0		9.5	44.1	26.6		9.8	3 18.7	16.2		9.2	10 4.1	37.	
9.6	13.9	43.9		9.5	29.7	28.9		8.7	56.7	29.5	K	9.2	29.5	0.8		10	4.3	31.	
9.3	14.5	27.5		9.2	45 1.9	5.1		9.2	54 4.6	38.9		9.7	34.3	50.2		9.2	5.2	25.	
9.8	35.9	15.3		9.2	6.8	4.8		9.4	15.6	16.9		9.3	41.3	58.1		9.3	7.8	43.	
9.0	50.9	21.3	K	9.8	8.9	26.1		9.8	18.7	30.3		9.1	41.4	46.6		9.5	8.6	53.	
9.8	52.0	50.6		9.6	14.7	19.5		10	22.9	44.3		9.2	44.4	51.3		8.9	11.0	13.	
9.6	36 13.8	28.8		9.6	17.6	24.1		9.4	53.2	23.0		9.5	48.6	30.3		8.9	13.0	7.	
9.9	27.9	57.9		9.5	20.7	11.0		10	55 16.1	7.2		9.3	49.5	56.9		9.1	13.8	2.	
8.5	37.6	44.7	K	9.8	23.6	57.9		9.5	23.8	10.0		9.1	50.0	31.0		9.5	19.3	16.	
8.9	46.9	49.3		8.1	49.0	52.1	K	10	27.5	5.9		9.0	55.5	2.2	K	8.5	23.4	1.	
9.5	59.3	19.6		9.5	46 12.9	25.1		9.2	42.7	32.9	M	9.5	57.7	47.5		9.9	30.1	57.	
9.6	59.9	23.9		9.7	14.9	7.0		9.1	48.3	14.8		9.8	4 11.6	19.9		9.8	31.3	15.	
9.5	37 0.6	17.8		9.8	17.2	10.9		9.4	56 35.0	59.3		9.5	14.6	55.3		8.2	45.0	2	
9.5	4.3	44.3		9.8	24.7	30.3		8.7	39.9	43.1	K	9.4	42.0	50.8		9.3	48.3	22	
10	6.0	56.2		9.2	27.9	50.2		9.6	41.5	49.8		9.7	50.5	32.5		9.6	51.6	14	
8.2	8.4	23.1	K	9.5	32.9	59.0		9.1	50.5	57.6		8.3	58.6	28.0	K	9.3	54.6	13	
9.3	12.6	6.0		9.4	34.9	19.8		9.8	55.3	21.0		9.8	5 9.7	33.4		9.6	11 4.1	30	
9.1	19.8	28.7		9.5	36.1	19.4		10	57 3.6	18.9		10	16.5	1.1		9.6	7.5	40	
9.4	25.3	44.6		10	57.5	44.2		10	10.2	20.7		9.5	20.1	42.3		9.0	18.4	50	
9.5	44.6	6.9		9.7	58.0	24.3		9.5	17.5	29.4		9.4	21.6	43.8		9.9	26.7	43	
9.8	46.7	58.7		9.3	58.7	33.7		9.2	29.4	36.3		9.7	25.8	9.8		9.5	30.8	8	
8.5	38 5.9	1.3	K	9.3	47 6.2	2.9		8.0	43.8	12.2	K	8.9	27.7	12.2		9.8	36.2	30	

5001—5060				5061—5120				5121—5180				5181—5240				5241—5300			
	18h	−14°			18h	−14°			18h	−14°			18h	−14°			18h—19h	−14°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	11 41.3	46.5		9.8	19 32.4	48.5		9.4	26 51.8	25.4		8.8	37 26.0	20.9	M	9.3	50 15.8	23.0	
8.7	58.5	54.2	M	9.5	45.3	47.5	A	9.5	53.1	59.4		9.8	43.9	40.1		8.5	21.3	57.3	K
10	12 15.1	24.9		9.3	47.6	45.0	A	9.8	27 4.3	17.7		9.5	38 18.6	11.8		9.3	26.6	53.5	
9.2	16.5	11.6		9.4	48.2	29.7		8.5	4.9	47.3	K	9.4	22.8	21.5		9.1	38.5	17.9	
8.9	20.2	0.8	K	9.3	51.6	55.6	A	9.5	19.4	3.3		9.5	26.6	45.0		9.1	51 8.4	17.3	
9.5	37.5	58.4		9.8	20 5.8	20.1		9.8	28.9	29.3		8.8	29.4	59.9	K	9.0	15.5	17.0	
9.5	39.4	43.0		9.2	14.8	14.8	K	9.6	32.6	22.2		7.5	32.5	36.4	K	9.5	21.9	32.6	
9.5	47.6	49.7		9.4	24.3	24.6		9.1	33.8	32.0		9.0	34.2	53.3		9.0	36.8	52.0	
9.3	48.3	13.2		8.8	30.4	16.1	K	7.5	45.9	10.1	K	9.1	57.5	40.2		9.4	49.0	13.4	
9.2	13 24.4	19.2		9.5	56.3	18.9		10	46.4	37.9		9.2	39 7.5	58.2		10	52 8.4	48.1	
10	47.8	4.4		5.0	57.2	39.3	A	8.6	58.3	13.5	K	9.1	19.3	49.7		9.6	19.9	44.4	
9.5	56.3	1.6		9.2	57.7	43.3	A	9.4	28 11.8	10.1		8.9	26.5	40.6	K	9.4	28.5	12.7	
6.8	14 0.7	27.0	K	9.3	59.4	12.1		9.4	26.3	35.9		9.0	32.1	7.3	M	9.3	29.8	31.2	
9.7	6.8	40.8		9.3	21 5.3	22.5		9.1	28.7	4.1		9.8	56.7	40.1		9.5	32.4	32.9	
9.5	19.6	58.7		9.6	5.4	16.0		9.4	46.4	18.0		7.0	57.6	51.6	K	9.5	53 11.5	9.7	
9.1	25.3	42.7		9.3	19.9	49.8		9.5	29 0.7	51.7		9.5	40 7.5	34.5		8.7	12.1	43.2	K
8.4	29.7	25.5	K	6.8	31.0	40.4	A	9.3	14.7	39.5		7.7	46.5	3.6	K	9.4	12.5	39.5	
9.7	43.9	33.7		9.0	39.3	9.4		9.8	25.8	27.1		8.3	41 7.0	33.0	M	9.3	21.2	30.8	
9.3	54.8	26.9		9.4	44.2	27.5		7.0	48.9	7.5	K	9.5	34.1	19.3		9.5	34.1	42.3	
9.5	15 0.3	25.9		9.2	46.6	53.8	A	9.1	30 5.8	37.3		9.8	41.6	41.1		9.1	37.4	30.2	
9.5	5.2	30.5		9.2	46.9	18.0		9.5	51.5	21.7		9.5	53.5	50.2		9.8	48.0	19.5	
9.3	5.6	32.4		9.4	49.5	56.6		9.5	53.4	26.2		9.4	57.2	57.9		9.5	49.6	57.2	
9.5	8.1	53.4		9.3	22 8.0	41.0		9.1	55.7	31.9	K	9.4	42 7.6	11.8		10	59.5	17.6	
9.3	11.0	1.1		9.8	25.9	8.1		9.2	31 0.5	49.3		8.3	12.7	32.7	M	9.1	54 8.5	18.8	
9.3	19.6	57.5		9.4	31.1	53.2		10	1.3	36.3		9.1	38.8	4.7		9.1	21.5	3.8	
9.4	23.6	41.0		9.7	41.0	32.8		9.8	4.1	14.2		9.4	50.7	31.1		9.2	27.5	1.8	
9.8	32.9	24.2		10	42.5	37.8		9.3	7.8	54.0		9.6	50.9	49.6		9.0	32.9	43.5	
9.5	36.0	35.6		10	47.2	43.1		9.2	28.9	48.1		9.5	43 1.1	33.5		9.3	38.8	39.5	
9.4	36.8	12.9		9.3	23 0.8	46.2		8.9	32 2.6	53.3	A	9.1	6.6	11.3		9.7	51.3	22.4	
9.3	16 4.8	14.0		8.8	3.4	12.7	M	9.1	8.8	41.2		8.1	8.3	51.4	A	9.3	55 1.7	56.1	
9.4	11.3	47.0		9.7	8.7	52.5		10	10.8	52.0		9.0	9.1	4.6	K	9.5	11.6	11.2	
8.9	16.6	49.6	K	9.3	10.2	27.1		8.3	39.5	37.7	M	9.5	41.1	16.2		10	17.1	4.3	
9.1	17.4	51.0	K	9.5	19.5	24.6		8.7	52.3	53.2	A	10	44 37.1	49.4		9.5	21.0	9.9	
9.8	39.6	56.3		9.9	29.2	49.2		9.8	33 11.9	56.6		9.7	45 4.9	1.5		9.2	47.1	40.8	
9.4	45.4	11.5		8.5	44.3	6.2	K	9.4	20.6	41.6		8.2	7.4	28.7	K	9.6	47.5	34.4	
9.8	46.6	4.2		9.8	56.4	6.2		6.6	26.6	41.7	K	9.5	23.1	9.8		10	48.7	47.7	
8.2	50.0	43.3	K	10	24 1.4	11.3		8.9	34 6.2	43.5	A	9.1	24.2	31.1		8.5	56 0.4	32.5	K
10	59.2	34.1		7.0	4.3	44.9	Sj	9.3	9.1	47.0	A	9.9	35.6	55.3		9.5	20.7	35.3	
6.8	17 2.4	3.0	Sj	5.8	26.1	58.0	B	9.3	15.3	17.4		9.8	52.9	24.9		9.0	33.8	46.0	
9.4	21.7	49.4		9.9	31.7	40.7		9.6	28.3	27.8		9.1	46 3.2	25.5		9.0	36.3	3.5	M
9.4	49.2	26.6		9.5	34.3	43.8		9.1	31.6	36.1	K	9.2	22.7	37.1		8.0	57 39.4	51.8	K
9.5	49.6	56.1		9.0	54.7	0.7		9.1	49.2	35.7	K	8.5	28.7	31.1	K	9.8	43.2	48.7	
9.7	49.7	42.1		9.1	58.4	5.4		8.9	56.0	49.4	A	9.7	46.8	22.9		10	58 3.1	42.4	
8.2	51.1	52.1	K	9.5	25 2.3	26.6		9.2	35 5.1	48.2	A	8.9	55.3	39.6		9.6	16.4	10.0	
10	59.3	25.0		8.7	8.4	12.7		8.5	25.2	34.7	M	7.0	59.6	52.1	K	9.5	18.8	22.5	
9.5	18 2.8	13.5		6.7	22.1	57.6	B	10	36.5	56.9		9.4	47 11.7	24.3		9.5	38.3	53.5	
10	23.5	43.4		9.7	29.0	47.0		9.5	58.0	3.9		9.2	33.6	10.6		8.5	52.4	17.2	K
10	29.2	59.6		9.3	29.6	13.4		9.7	36 9.7	53.2		8.0	34.6	59.6	K	9.7	56.9	29.3	
9.8	31.5	55.0		9.6	31.9	9.2		9.9	27.8	54.0		9.4	48 14.3	54.5		10	57.2	24.2	
9.1	32.3	35.1		8.5	35.3	31.7	K	9.6	28.8	28.0		9.8	17.7	36.5		9.5	59 19.0	49.2	
9.4	39.3	16.3		9.4	49.3	27.5		9.4	29.1	15.6		7.5	34.4	12.4	K	9.5	26.7	31.1	
9.3	40.2	32.9		9.5	58.8	33.9		8.6	38.4	29.7	M	9.2	35.6	4.0		9.5	38.4	9.3	
8.4	58.3	46.6	M	8.1	26 16.6	40.7	K	9.8	51.0	50.3		9.4	49 21.4	2.7		9.5	40.3	22.4	
9.3	59.9	48.5		9.3	18.5	30.9		9.3	37 3.2	6.8		10	34.1	56.0		10	42.2	50.3	
9.8	19 6.4	43.6		10	24.8	0.1		9.2	4.2	24.5		9.2	43.1	30.7		9.7	43.8	45.5	
10	8.3	21.2		10	26.4	11.0		9.7	6.4	49.6		9.4	46.4	30.8		8.9	0 9.2	1.0	M
9.8	9.6	47.3		9.2	37.0	48.5	K	9.5	8.5	57.0		10	54.4	37.5		9.0	28.0	42.1	
9.4	16.0	4.8		8.3	38.0	48.7	K	9.4	13.5	46.3		10	50 3.5	59.3		9.5	41.2	48.8	
9.8	23.2	53.0		9.4	40.7	53.9		9.1	18.1	48.2	M	9.5	4.4	25.6		9.5	43.5	0.7	
9.5	32.3	17.9		9.5	41.5	12.7		9.1	19.7	5.2		9.8	9.4	39.1		9.4	47.3	56.1	

5099: goldgelb

5301—5360				5361—5420				5421—5480				5481—5540				5541—5600			
	19h	—14°			19h	—14°			19h	—14°			19h	—14°			19h	—14°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.9	0 49.7	28.5	M	10	8 17.3	23.7		9.0	16 12.5	16.8	K	10	29 40.4	7.8		10	38 26.2	0.5	
9.1	53.9	7.9	M	10	29.4	35.4		8.2	15.9	53.4	B	9.5	43.5	57.9		9.6	27.8	5.1	
9.5	54.2	35.3		9.7	29.6	46.7		9.8	24.3	41.1		9.6	56.6	19.1		10	29.4	54.2	
10	57.8	9.1		9.5	33.2	57.2		9.8	30.8	43.1		9.6	30 0.6	15.1		9.7	38.9	2.6	
9.4	1 6.6	35.8		10	40.3	36.7		9.1	36.4	54.8	M	9.3	11.2	27.4		9.7	48.8	51.4	
10	8.7	20.8		9.1	46.2	48.8	A	9.3	55.9	44.6		9.8	16.2	1.2		10	39 0.3	32.2	
9.0	18.1	48.8		9.8	50.5	38.4		8.0	17 9.7	48.3	L	9.5	30.6	46.8		9.7	12.6	55.5	
9.7	19.3	34.7		9.4	9 2.4	17.6		6.0	10.4	10.3	K	9.1	43.6	41.6		9.4	24.7	15.1	R
9.8	36.6	56.5		9.5	2.9	31.7		9.3	19.0	21.8		9.0	48.6	53.8	A	9.2	29.0	53.3	
9.5	54.4	51.8		9.5	5.9	4.6		9.7	31.0	49.2		9.5	56.7	30.0		9.9	32.9	43.3	
9.1	57.1	3.2	M	8.2	14.6	45.3	A	9.5	40.2	59.2		9.4	58.1	25.8		9.9	43.4	34.8	
9.3	2 20.1	42.3		9.6	31.6	42.8		10	42.4	45.7		9.4	31 0.7	27.4		8.3	50.9	55.5	A
8.2	3 1.8	16.6	Sj	9.1	39.7	55.0		9.3	53.5	30.1		8.5	6.2	34.7	M	9.5	51.7	36.8	
10	4.2	36.9		9.5	49.4	12.8		9.8	59.3	34.8		9.3	13.9	3.8		9.5	51.8	34.2	
9.9	21.2	2.0		9.8	49.8	30.0		7.2	18 10.7	50.3	L	9.9	23.2	14.4		6.4	54.1	3.4	R
8.9	32.3	15.9		9.3	57.3	7.6		9.8	38.1	51.4		8.9	38.1	21.5		9.7	54.9	7.0	
6.8	40.1	49.3	A	8.8	10 12.5	4.7	L	8.5	42.0	26.1	L	10	53.1	0.5		9.7	40 15.2	13.3	
9.1	43.1	54.7		9.0	14.9	35.6		9.7	19 28.7	43.5		7.3	54.2	22.2	Sj	9.8	29.8	44.3	
9.4	47.7	33.8		9.1	21.4	33.8		8.8	20 2.8	58.8	K	9.0	59.9	42.3	M	8.2	49.3	44.5	K
9.5	51.8	28.2		7.5	27.6	48.1	A	9.4	15.5	47.3		9.2	32 27.6	25.8	M	9.8	57.0	29.3	
9.2	54.2	30.7		9.3	29.8	21.5		7.8	25.0	26.8	K	9.2	33.1	46.4	K	8.7	41 3.8	56.9	K
9.8	4 2.5	2.8		8.8	38.9	24.0		9.3	36.4	55.3		9.8	33.4	16.0		9.2	40.7	2.9	
9.8	9.2	3.1		9.4	39.4	41.0		9.3	40.0	10.0		9.8	36.4	48.0		9.5	45.3	5.3	
9.8	10.1	47.5		9.1	11 3.2	14.7		9.5	52.5	27.2		9.8	54.7	8.9		9.8	42 7.8	59.1	
8.3	35.8	49.9		9.5	4.6	10.8		8.7	21 32.0	11.6	L	9.4	33 1.4	55.1	M	7.3	17.9	17.1	K
9.8	36.2	14.4		9.7	15.1	2.5		8.2	39.0	17.9	Sj	9.5	12.1	57.4		9.2	23.4	10.4	K
8.0	37.7	28.3	K	8.2	20.9	24.7	L	9.3	22 10.9	52.6		9.8	27.4	52.3		8.7	24.2	28.0	B
9.2	40.2	9.0		9.5	29.4	33.0		9.2	15.0	5.6	M	9.5	46.2	36.1		9.1	39.3	57.4	
9.4	40.3	1.0		9.0	37.8	31.8		9.4	26.5	35.8		9.6	47.6	17.3		10	40.6	42.4	
9.2	46.2	20.7	M	8.8	47.4	50.6		7.8	45.4	51.7	Sj	9.4	50.2	6.0		9.7	44.0	46.2	
9.5	47.0	32.0		9.3	52.3	18.0	M	9.8	48.6	27.0		9.2	50.6	26.8	K	9.1	56.9	57.8	K
9.1	56.6	41.4	M	7.3	54.3	42.5	L	8.7	23 14.1	16.6	K	9.3	52.7	24.6	Sj	9.6	43 15.8	39.2	
7.8	5 12.1	41.1	Sj	9.6	12 6.6	36.3		8.5	27.1	47.2	A	9.5	52.7	21.0		9.5	26.4	54.0	
9.8	17.3	22.5		9.1	8.0	36.0		9.1	49.5	25.6		9.2	55.6	41.7		9.4	30.9	36.1	
9.1	29.3	8.9		9.5	10.5	26.6		9.6	54.5	1.8		9.5	34 10.0	57.4		10	34.9	28.5	
9.8	31.6	53.8		9.8	19.7	9.7		9.3	56.6	38.3		10	37.7	16.2		9.6	44 19.0	6.5	R
10	43.6	46.0		8.7	21.7	0.4	M	9.1	24 19.0	37.4	Sj	10	38.1	42.3		9.3	27.7	0.2	
9.2	44.3	55.8		9.5	41.0	48.1		9.2	23.4	54.4	K	8.6	51.6	33.7	Sj	6.8	56.6	57.9	B
6.5	47.7	16.9	Sj	9.8	44.7	49.4		9.2	43.6	22.8		9.7	35 3.6	50.5		9.4	58.1	5.2	
9.3	49.5	37.9		9.6	50.9	3.9		9.6	25 1.6	12.7		10	14.2	26.5		9.6	45 27.1	41.3	
9.1	52.8	19.1		9.5	58.6	52.4		8.5	6.9	5.4	Sj	9.5	30.7	7.9		8.3	32.8	32.6	K
9.5	6 1.8	39.0		9.5	13 3.8	52.0		8.7	24.3	46.3	Sj	9.5	41.9	46.3		8.8	53.5	13.4	K
8.8	18.9	42.4	M	9.5	12.7	9.3		10	31.1	27.3		neb	47.2	29.5		9.2	46 32.4	13.2	K
9.3	27.9	40.6	M	7.8	32.5	17.9	K	9.2	41.0	18.0	K	10	57.6	56.5		9.8	56.9	26.1	
9.5	43.1	3.8		9.1	36.1	50.9		9.5	26 12.0	52.9		8.7	36 0.0	51.4	K	8.4	57.0	9.6	K
10	43.2	45.1		9.2	14 1.9	24.0	M	9.0	41.0	55.7	A	9.3	2.0	39.3		8.7	57.8	38.8	M
9.5	46.4	30.9		8.3	11.9	0.2	K	9.3	51.6	5.8		9.1	17.5	33.6	B	9.8	58.5	51.7	
9.2	7 1.2	42.9	M	9.4	26.3	17.8		9.3	27 10.4	3.3		10	21.3	18.8		9.3	47 13.2	50.3	
9.0	7.6	47.9	M	8.8	29.2	23.9	L	9.5	22.1	14.1		9.9	29.2	22.1		9.8	36.6	3.4	
9.8	15.4	12.6		9.5	29.5	43.6		9.0	32.6	30.4	K	9.7	43.6	2.6		8.9	44.6	48.1	
9.2	19.6	57.7	A	8.4	31.5	18.0	Sj	10	46.9	41.5		9.0	47.3	56.9		9.4	48 1.5	5.5	
9.0	20.3	9.9	K	9.2	34.0	20.3	M	9.2	57.1	32.8	K	9.5	53.3	33.6		10	3.0	10.1	
9.8	32.7	51.4		9.0	44.1	31.9		10	28 11.6	1.9		10	37 5.2	24.9		9.1	9.2	24.3	R
9.5	33.7	52.2		9.6	57.3	4.0		9.7	22.5	46.1		8.9	24.5	48.7		9.8	22.4	56.9	
9.1	45.9	41.6		9.5	15 31.5	49.0		7.5	58.9	44.9	K	9.1	35.3	23.9		9.8	43.0	59.2	
9.5	53.1	59.5		9.1	32.8	7.9	M	9.4	29 17.1	47.6	A	9.3	41.2	35.8		9.2	45.4	26.3	
9.5	54.5	41.6		9.5	42.7	58.6		9.5	18.1	19.2	K	8.8	52.8	9.7	R	9.8	49 21.1	9.4	
9.2	8 7.9	1.6		9.5	49.0	14.4		8.9	20.5	43.2	K	10	57.8	23.0		9.5	31.2	42.3	
9.3	9.4	4.6		9.5	52.4	45.8		5.6	23.6	37.2	K	9.1	58.5	15.6	R	9.3	35.0	52.9	
9.6	9.8	13.4		9.8	54.0	16.2		7.3	37.6	16.4	M	9.1	38 12.1	48.5		9.4	44.7	48.1	

5601—5660					5661—5720					5721—5780					5781—5840					5841—5900				
	19h—20h		−14°			20h		−14°			20h		−14°			20h		−14°			20h		−14°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.6	50	8.5	42.3	WZ	9.8	2	52.5	10.9		9.8	13	16.9	27.3		6.0	26	7.1	12.7	B	10	36	48.4	23.5	
9.7		10.5	58.5		10	3	7.3	4.2		9.4		30.7	30.9		9.8		17.1	21.5		9.4	37	6.9	32.4	
8.8		17.1	23.7	K	var		10.2	41.6	B	9.5		56.7	50.4		9.8		26.0	37.0		9.8		47.9	30.6	
10		32.3	20.1		8.5		23.1	12.2	M	9.4		58.3	27.8		9.5		27.1	47.1		9.1		59.9	38.2	
9.8		43.9	6.0		9.8		27.6	49.3		9.8	14	10.3	41.4		9.8		34.1	21.6		9.8	38	1.1	55.2	
9.1		46.9	10.8		9.1	4	7.1	7.6	M	9.4		11.4	16.6		8.9		40.3	56.1	K	9.1		5.9	24.8	
9.8		48.0	48.6		9.5		16.0	34.2		9.8		40.9	22.0		9.5		52.3	51.0		9.5		50.3	11.8	
9.3		55.7	8.3		9.3		30.8	6.5	WC	9.4		43.6	10.1		9.3	27	11.7	8.3	K	10	39	9.0	14.3	
9.4	51	37.8	28.8		9.4		31.9	52.2		9.6		49.8	41.8		9.5		15.6	5.1		9.9		16.5	36.2	
9.3		59.7	5.2		8.2		40.7	13.2	K	9.3		50.9	59.0		9.3		18.1	5.5	K	9.6		34.1	56.8	
9.4	52	2.4	59.1		9.0	5	13.2	6.8	K	9.4	15	8.3	37.6		9.3		18.1	23.6		9.4		53.2	6.3	
9.5		2.5	13.9		9.2		20.2	19.0	M	7.0		19.5	43.1	L	9.4		49.8	55.9		9.2	40	17.6	1.1	WC
7.5		58.6	19.6	K	9.5		26.2	8.5		8.3		29.3	28.9	L	9.7		55.0	27.7		9.4		22.0	7.0	
9.1		59.9	20.7	K	8.5		36.6	37.5	Sj	7.3	16	9.3	34.8	L	9.0		56.7	19.4		9.5		27.5	28.6	
9.5	53	10.0	12.9		9.2	6	2.2	37.1		9.8		31.0	16.6		9.1	28	3.1	32.7		8.8		33.6	4.4	K
9.8		24.2	55.7		9.8		3.0	15.8		8.5	17	24.9	35.2	K	9.7		29.0	1.2		9.1		43.0	4.3	K
10		39.4	35.9		8.7		4.7	19.7	Sj	9.1		29.5	49.6	K	9.1		31.6	36.5	Sj	9.3	41	7.0	24.9	
5.8		50.7	1.7	Sj	9.8		5.8	49.6		8.5		34.5	2.1	M	9.5	29	12.8	59.2		9.8		8.2	7.2	
9.7		58.1	40.4		9.5		22.3	16.4		9.8		54.3	35.2		9.4		13.6	53.6		9.0		27.1	32.1	K
9.3	54	0.7	32.9		8.0		28.9	46.2	K	8.8		57.7	45.3	K	9.5		26.3	59.5		9.4		38.1	57.3	
9.7		31.1	47.7		9.8		43.6	38.8		8.0	18	11.9	20.0	K	9.5		33.7	6.6		8.6		54.8	10.6	K
9.8		48.6	43.8		9.7		47.4	33.9		8.3		12.6	1.4	Sj	8.5		45.2	17.7	M	10	42	6.2	59.5	
9.2		52.4	29.4		9.9	7	11.2	29.8		9.4		19.3	38.4		10		55.4	49.4		9.9		27.0	13.5	
9.5		58.5	56.5		9.0		18.7	42.2		9.3		43.0	9.2		9.6	30	8.2	44.6		8.0		45.7	44.4	K
9.5	55	12.5	56.5		9.7		26.4	21.7		8.5	19	9.5	0.9	K	9.3		17.8	46.9		9.7	43	6.2	44.6	
8.8		23.3	48.1		9.7		26.6	23.0		10		10.9	33.1		9.5		32.4	40.7		8.0		17.6	27.3	K
9.6		40.9	47.4		9.1		27.6	48.4		9.4		13.0	47.4		9.6		49.9	52.6		8.5		31.5	17.2	K
9.5		46.7	47.5		9.6		30.5	55.0		9.8		19.1	58.1		10		52.1	30.1		10		42.7	46.1	
9.1		58.2	32.6		9.7		30.5	9.6		9.1		26.6	47.3		9.5	31	23.8	0.4		9.6		53.6	30.8	
9.8		58.6	14.7		9.0		34.8	44.5		9.4		27.9	53.4		9.0		34.7	13.3	K	9.9	44	18.1	20.3	
10	56	56.1	50.0		9.6		34.9	28.6		9.3		39.9	36.4		9.3		58.7	7.0		8.9		32.6	18.3	M
9.1		58.5	7.1		9.1		52.3	58.7		10		55.2	48.3		8.3	32	1.2	31.2	Sj	9.8		48.6	39.1	
9.4	57	17.7	45.0		9.0		56.1	43.5		7.8		57.9	28.2	M	9.6		33.8	24.7		9.0	45	0.3	48.6	M
8.7		31.7	44.8	K	9.3		57.2	37.2		8.8	20	11.5	16.5	M	9.0		50.7	47.4		10		2.2	29.9	
9.2		36.4	2.6		9.2	8	11.2	30.5		9.5		13.9	30.0		7.7	33	11.3	0.6	Sj	7.8		30.7	58.0	K
9.4		48.5	22.8	M	9.3		39.3	50.1		9.2		28.6	48.2		9.1		15.7	19.2		9.3		36.1	35.8	
9.5		53.9	34.6		8.7		43.2	38.3	M	9.4		31.6	50.0		10		16.6	3.4		10		48.2	15.7	
9.2	58	15.4	45.3		9.5		45.5	33.0		9.4		56.1	8.1		9.2		24.2	30.6		9.8		53.1	17.0	
9.7		23.4	39.3		9.5		56.0	51.8		9.5	21	0.3	1.5		9.4		34.9	58.8		9.4	46	15.2	17.0	
9.0		50.3	53.3	M	10	9	0.1	41.7		9.5		22.5	22.0		9.3		41.3	3.2		8.3		16.7	42.8	K
9.1		54.6	53.9		9.4		7.2	31.8		9.5		49.6	50.8		9.0		45.1	24.8	K	9.7		29.0	48.6	
9.3		57.5	15.2		9.1		20.2	25.3		9.8		56.2	54.1		9.7		52.7	45.1		9.0		41.6	21.7	M
9.7	59	15.4	1.1		8.4		22.8	24.1	K	9.5	22	0.1	11.5		9.5		52.9	58.8		9.6		43.4	0.7	
10		39.1	46.0		9.4		36.0	43.6		10		25.0	9.0		9.6	34	5.8	8.8		9.5		49.1	0.5	
9.2		48.6	23.5		10		39.7	23.7		8.9		55.9	3.9	K	9.6		12.7	46.8		10	47	19.2	26.0	
9.3	0	16.6	40.0		10	10	15.8	19.0		8.5	23	48.0	15.9	Sj	8.8		25.8	19.0	K	9.4		25.1	39.0	
9.4		18.7	15.7		9.3		22.7	19.9		9.5	24	0.6	9.9		9.1		31.7	39.1		9.5		33.1	0.8	
7.5		26.8	40.5	K	7.6		55.4	44.1	A	9.3		6.3	52.3		9.7		50.9	51.0		9.3		51.8	57.1	
9.6		34.1	26.3		10	11	0.8	48.9		9.0		9.7	57.2		9.0	35	11.3	23.9		10	48	2.2	33.1	
9.7		41.1	49.6		9.2		5.6	20.5		9.5		11.5	25.2		10		27.7	21.4		9.4		8.4	4.2	
9.7		49.0	40.9		9.3		15.4	40.6		9.5		27.5	29.4		9.1		30.0	55.0		9.8		11.2	39.7	
9.0	1	27.2	42.4	K	9.8		29.0	49.0		9.5		37.5	37.9		9.6		47.3	25.2		10	49	5.4	30.6	
9.8		31.4	19.6		8.7		45.7	43.4	M	9.5		39.0	44.1		9.8		55.3	23.6		9.0		17.7	21.4	Sj
8.8		39.9	41.7	K	9.4		46.9	17.9		9.5		39.2	53.5		9.1		56.1	36.4		10		53.8	25.7	
10		55.2	26.1		9.3	12	0.3	25.9		8.7		42.6	11.6	L	10	36	1.4	47.0		9.0	50	3.8	11.1	K
10	2	7.5	41.9		9.4		6.8	25.9		8.3		46.3	2.1	K	9.4		9.3	21.7		9.5		7.7	17.7	
9.1		16.1	7.8		9.8		17.8	17.3		9.8	25	6.3	47.6		8.8		10.8	13.2	Sj	10		19.7	27.0	
9.8		23.6	46.1		8.8		39.9	7.2	K	9.1		10.6	34.1		10		25.8	43.3		9.5		37.3	22.8	
9.6		28.5	3.7		8.3		57.8	21.0	K	10		16.2	7.0		7.1		29.6	42.3	L	9.5		44.2	14.4	
10		30.1	38.5		8.5	13	9.4	55.5		9.2		26.9	2.2	K	10		29.7	35.6		9.6		47.5	2.5	

5901—5960					5961—6020					6021—6080					6081—6140					6141—6200				
20h—21h			—14°		21h			—14°		21h			—14°		21h			—14°		21h			—14°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.8	51	4.8	38.6	K	10	4	48.0	40.1		9.4	17	29.6	13.8		9.0	29	7.4	29.2	K	9.5	42	54.3	21.5	
8.8		16.5	41.8	K	9.4	5	14.6	9.1		8.9		37.1	34.2	K	9.0		8.5	37.5	K	9.4	43	10.8	9.7	
10		52.2	35.5		8.8		16.9	16.4	K	9.1		43.7	59.7		9.8		37.5	24.7		9.3		36.4	15.5	
9.4		57.0	29.3		9.1		17.2	27.4	K	9.1	18	22.6	11.7	K	9.7		38.0	29.4		8.2		42.3	10.4	Sj
9.7	52	0.5	56.6		9.1		17.9	57.5		9.5	19	23.7	26.9		9.5		50.1	57.8		8.6		59.0	36.5	K
9.1		15.1	30.0	M	10		23.2	50.2		7.3		27.9	12.6	Sj	9.2	30	3.4	6.2		9.8	44	13.6	50.1	
8.5		15.9	3.3	Sj	9.1		31.0	41.4		9.3		28.6	40.8		9.5		19.6	51.8		9.4		40.0	2.3	
7.0	53	8.2	5.5	K	9.8		31.9	18.5		9.3		32.3	44.0		8.0		20.5	10.9	B	8.8		56.5	36.5	Sj
9.1		21.4	56.5		9.5		58.3	45.8		9.0		45.6	11.3	K	9.3		38.0	5.2		5.0	45	25.2	13.9	L
10		34.4	22.6		8.6	6	3.2	17.1	K	8.6		59.5	3.2	Sj	9.2		41.5	12.2		7.5		29.1	51.9	K
9.0		41.9	4.2	Sj	9.4		15.1	36.7		8.2	20	4.7	19.4	K	9.8		45.7	3.2		9.3		33.8	8.4	
9.9		51.8	14.1		9.4		19.6	28.9		9.4		7.1	3.3		9.7		56.7	50.1		9.5		59.0	12.0	
10		55.5	55.2		8.7		30.7	44.3	K	9.8		11.3	58.3		9.4	31	12.6	23.6		9.0	46	3.0	37.5	A
9.3	54	6.9	34.9		9.1		34.5	54.8	M	9.8		23.5	23.6		7.0		20.1	32.0	Sj	10		6.6	17.4	
8.8		36.5	41.7	K	9.2		39.7	26.0	K	9.3		32.3	35.0		8.2		20.2	42.5	K	9.1		10.6	57.0	
9.3		44.2	50.2		10	7	11.7	46.9		9.7		42.8	56.4		9.1		56.0	15.4		10		25.0	39.0	
9.0		54.2	56.9	A	9.0	8	5.3	3.6	K	9.3		59.7	31.7		10		57.5	21.3		9.5		42.7	41.4	
9.8		56.4	29.8		9.0		19.3	9.5	Sj	8.3	21	8.2	25.6	K	10	32	26.6	24.4		9.3	47	15.1	50.9	
9.5	55	2.3	28.9		9.1		19.9	37.6		7.0		43.1	39.5	K	9.1		56.5	15.4		10		55.7	58.0	
9.4		25.2	33.8		10		39.2	26.9		9.5		52.3	52.4		9.4	33	16.4	40.9		9.0		58.2	50.9	
9.0		38.4	17.3		9.8		52.3	39.8		9.4		52.9	19.0		8.9		26.2	35.0	K	9.8		58.7	15.5	
9.3		43.6	42.3		9.8		52.7	44.4		9.3		57.8	51.3	R	5.5		38.8	41.6	K	9.8	48	2.3	21.4	
9.2		53.9	33.5		9.4		58.8	11.2		9.5	22	4.8	58.6		8.7		50.4	50.9	K	7.8		15.9	43.2	Sj
10	56	12.7	35.0		9.3	9	29.3	36.2	A	9.7		14.1	47.4		9.4	34	11.1	31.4		9.4		16.4	27.4	
8.9	57	6.3	43.2	M	9.5		31.6	46.8		9.1		37.1	47.2	K	10		23.4	8.9		9.7		28.2	50.0	
10		20.8	46.7		9.3		33.7	51.8		9.1		40.5	48.4	Sj	10		24.2	26.3		9.0		35.1	17.4	Sj
9.8		29.9	22.5		9.1		35.6	1.4	K	7.0		43.3	55.5	K	9.3		47.5	38.0		9.6		46.0	47.6	
9.9		31.4	25.7		10		50.9	23.4		9.3		54.8	17.6		10		48.2	52.7		9.5		47.4	30.1	
9.4		37.1	56.6		9.9	10	34.2	39.1		9.3	23	7.5	17.1		10	35	0.7	37.9		8.5	49	4.4	1.9	K
9.4		47.7	4.3		8.8		38.0	3.8	Sj	9.3		44.2	7.6		9.1		6.1	20.1	B	9.3		9.6	47.9	K
10	58	36.2	44.7		9.2		43.3	36.4	K	9.1		48.3	8.2	Sj	9.1		29.8	49.8		10		28.6	12.9	
8.0		39.1	4.9	K	9.0	11	6.8	36.0	K	9.5		50.9	36.8		9.5		49.6	51.3		9.7		32.1	15.4	
9.9		49.4	17.5		9.5		14.3	13.2		10	24	12.4	26.4		8.9	36	7.2	36.7	A	9.0		32.4	34.1	K
9.6		50.3	31.2		10		16.1	36.0		10		26.6	44.1		8.9		52.3	37.6	Sj	9.5		40.2	37.0	
9.4	59	4.2	58.1		9.6		18.3	50.3		9.0		26.9	53.5		9.5	37	22.2	34.8		8.9		48.9	46.7	
7.2		8.0	30.0	K	9.0		34.9	39.8	K	9.4		31.3	27.6		8.7		25.7	20.1	B	8.9	50	1.0	35.3	K
9.0		24.1	35.1	M	6.7		49.6	37.3	K	9.3		44.0	50.9		10		28.4	2.1		9.5		18.5	25.9	
9.4		55.4	38.5		9.4		56.9	50.0		8.7		44.4	4.3	K	10		34.8	25.5		9.4		31.0	54.8	
9.2	0	1.0	34.7	K	7.5	12	11.9	6.3	L	8.8		52.5	5.9	K	8.7		35.7	18.6	K	10	51	36.2	38.2	
7.8		10.8	54.1	K	10	13	3.5	32.3		9.8		56.4	50.1		9.4		41.9	56.0		9.6		37.1	33.2	
9.3		24.5	16.7		9.7		21.7	3.3		10	25	4.4	26.0		8.8		54.4	0.4	Sj	8.8		47.4	7.0	K
8.7		34.0	24.9	K	9.5		25.0	57.8		9.3		11.8	10.9	K	9.4	38	37.8	55.6		10		48.7	50.9	
9.7		39.9	47.8		9.0		48.4	39.1		8.0		39.2	5.2	K	9.5		39.9	58.1		9.4		56.5	59.2	
9.5	1	2.0	16.5		9.2		50.8	9.8		9.4		47.9	43.1		9.3		57.6	10.8		9.8		58.1	45.2	
8.9		25.0	21.6	K	10		57.4	51.3		9.3		49.6	22.5		9.0	39	19.7	9.9	R	9.8	52	17.0	30.2	
7.7		35.6	42.0	K	9.5	14	16.5	10.1		9.1		50.5	9.4	K	9.5		31.8	47.1		9.5		17.6	44.3	
9.1		38.2	46.5		8.9		18.2	2.3	Sj	9.3	26	6.8	59.9		9.6		45.0	24.9		7.5		46.5	51.3	A
9.3		43.6	35.3	M	9.8		58.6	45.1		9.6		6.9	45.4		8.5	40	39.0	50.0	A	7.3		47.6	26.3	L
8.2	2	3.4	51.7	Sj	9.8	15	1.0	16.3		9.7		8.5	34.6		9.8		55.3	49.7		9.3	53	1.1	30.1	
9.5		49.6	9.7		7.8		24.5	7.6	K	8.0		22.3	7.5	Sj	9.4		57.4	25.0		8.9		17.6	53.1	A
8.8	3	4.2	38.8	K	9.5		56.6	30.7		9.3		30.9	17.1		9.0	41	0.4	23.9	A	9.0		19.1	34.2	K
9.5		28.6	34.7		9.6		57.0	3.0		8.8		48.6	32.5	K	9.8		15.9	21.1		10		34.0	23.1	
10		33.1	28.4		9.2	16	3.1	19.0		9.3		48.6	40.2		8.2		35.1	15.7	Sj	9.9		38.8	10.6	
8.7		55.9	17.5	K	9.6		7.6	44.2		9.3	27	8.9	41.7		9.5		36.1	45.7		9.5	54	41.9	46.4	
9.7		56.1	23.5		9.1		25.1	26.0	A	9.5		47.6	42.5		9.5		52.4	49.5		9.8		42.5	12.1	
8.8		58.0	38.0	K	9.0		38.8	50.8	M	9.4	28	8.4	20.2		9.7	42	8.6	2.5		9.5		47.3	36.3	
9.7	4	6.6	46.8		10		48.5	11.5		9.0		15.5	31.2	A	9.8		15.9	6.3		9.8	55	0.3	1.1	
9.8		21.6	26.6		8.9	17	1.1	59.0	K	8.7		29.0	37.4	K	9.5		18.8	50.5		9.7		11.6	43.7	
10		27.7	20.0		8.5		16.2	6.8	Sj	9.8		43.6	57.4		9.8		28.1	8.2		9.5		36.6	23.9	
8.5		45.9	58.8	Sj	7.2		26.5	53.8	K	8.0		48.9	6.2	Sj	9.8		33.0	36.1		9.8		58.7	54.6	

6201—6260					6261—6320					6321—6380					6381—6440					6441—6500				
	21h—22h		−14°			22h		−14°			22h		−14°			22h—23h		−14°			23h		−14°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.6	56	5.5	46.3		9.5	12	38.4	37.2		9.3	30	52.2	46.9	M	9.8	52	9.5	44.1		6.8	10	21.4	35.0	K
9.9		11.2	12.9		8.8	13	1.8	42.4	K	9.6		58.1	9.8		9.1		19.4	38.0		9.5		43.3	57.2	
9.1		31.0	45.7	M	9.6		7.1	41.4		9.8	31	41.6	34.6		9.2		26.3	27.1		8.8		45.8	40.7	
10		44.4	39.6		9.0		9.3	18.5		9.1	32	24.0	23.2		10		45.2	39.1		10		46.5	16.5	
9.0	57	41.3	28.3		9.6		56.9	26.0		9.3		46.5	13.3		10		46.5	46.3		9.5		48.0	33.1	
9.5		46.1	13.6		10	14	38.0	37.2		9.0	33	13.0	36.4	K	9.4	53	25.9	44.8		9.4	11	4.6	38.1	
9.8	58	16.8	59.0		9.5		44.4	45.0		9.6	34	17.8	1.7		9.1		32.1	8.8		8.8		20.1	39.2	M
9.1		27.4	40.9		9.1		52.8	10.5		9.4		41.1	17.2		9.4		43.1	30.5		5.3		30.0	14.4	Sj
4.5		35.3	33.6	K	8.0	15	20.8	56.7	K	9.7	35	27.2	36.8		9.0		52.2	45.0		9.8		30.0	10.6	
8.6		37.4	47.4	K	10		31.9	40.7		9.4		32.8	32.1		9.3	54	11.3	20.8		7.7	12	0.7	51.4	K
9.3	59	7.4	35.8		9.8	16	8.0	33.5		9.5		45.8	41.8		10		19.8	16.9		10		17.8	10.5	
9.2		48.7	42.3		9.5		8.7	35.0		9.3		49.2	25.1		9.3		44.1	3.7		9.5		57.9	41.4	
9.5		55.5	37.1		9.3		13.1	38.0		9.8	36	13.5	6.2		9.5		52.3	58.5		7.3	13	40.7	3.6	K
8.5	0	2.8	17.4	K	9.5		23.1	5.2	B	9.1		22.2	24.9		9.2		54.2	37.8		10		47.2	48.6	
9.4		16.4	17.2		9.5		33.4	10.1		9.2		39.1	12.0		8.9	55	3.8	6.9		8.3		51.0	27.2	K
9.5		20.2	50.7		6.5		41.7	15.6	K	9.0	37	9.2	21.2	WC	8.6		14.3	6.1	K	8.4		58.4	49.4	Sj
9.5		29.8	5.6		8.7	17	17.3	43.7	M	8.7		16.1	24.0	Sj	9.0		53.7	8.0		9.1	14	26.7	47.5	
7.2		57.6	0.2	K	9.2		19.0	26.4		9.1		17.1	21.9	WC	8.9	56	16.4	46.6		9.5		34.5	21.6	
9.5	1	4.1	16.8		9.2		22.7	48.3		9.4		32.0	13.1		8.6		46.1	55.1	B	10		47.1	54.0	
9.4		8.8	55.0		9.6		30.0	39.1		8.6		38.7	58.2	A	9.2	57	5.0	39.1		8.5	15	1.7	41.0	K
9.5		29.4	2.7		9.3		59.4	59.5		8.7		39.5	19.7	K	9.5		16.0	34.4		9.0		26.4	17.0	K
9.0		52.9	18.8		9.5		59.6	36.9		9.5		43.1	20.2		9.9		23.0	4.7		9.4		40.6	58.5	
8.2		56.3	35.7	K	8.5	18	39.0	51.1	A	8.2	38	23.9	35.9	K	9.7		34.1	44.3		9.8	16	2.6	2.3	
9.0	2	48.5	28.1		9.5	19	7.4	31.9		8.8		32.2	17.1	K	9.3		45.3	16.5		10		20.9	41.1	
9.5	3	31.0	8.9		9.4		7.5	47.6		9.5		59.3	19.0		10	58	40.7	40.5		10		23.0	45.8	
9.7		34.8	42.9		9.1		32.5	53.3	A	6.2	40	0.8	49.1	Sj	8.8		44.5	26.9	K	8.9	17	20.0	16.5	Sj
9.2		41.5	45.9		9.4		55.7	49.0		10		22.5	31.6		8.6		52.1	32.5	K	7.8		50.5	48.4	K
8.3	4	21.9	56.5	K	8.9	20	54.6	32.2	A	9.4	41	9.0	37.7		9.4	59	18.0	25.5		9.7	18	0.7	56.6	
6.5		35.9	54.4	K	10	21	5.2	32.0		9.8		16.2	50.4		10		18.2	49.8		9.5		9.0	12.7	
9.3		39.7	9.9		8.8		17.1	26.2	Sj	10		30.2	49.7		9.3	0	17.5	20.0		9.0		17.1	56.9	K
9.0	5	0.2	36.2	K	9.5		20.5	58.1		9.2		46.9	20.8	WC	9.3	1	6.6	13.5		9.0		47.2	25.7	
8.9		1.5	11.2		9.5		46.7	0.0		9.0		47.5	38.0		8.8		23.2	30.0	M	9.3	19	15.2	26.5	
8.0		17.6	34.9	K	9.7		53.9	55.0		9.0		49.0	2.7	B	7.5	2	43.0	25.3	Sj	9.7		38.2	43.9	
9.8		29.7	39.1		9.4	22	8.1	44.8		4.0		54.3	21.2	K	9.5		46.6	29.3		9.3		50.7	22.9	
10		30.8	19.3		8.9		46.8	36.2	K	7.7	42	42.4	49.5	B	8.7		49.0	5.5	K	8.6	21	11.4	50.0	M
9.5		31.9	57.0		9.2	23	0.6	17.0		9.2		42.8	18.7		8.8	3	3.4	10.0	K	9.4		58.0	23.0	
9.2	6	41.1	13.7		9.1		33.7	15.7	Sj	9.2		48.2	4.4		9.0		32.2	40.9	K	9.2	22	0.9	6.8	
10	7	24.5	18.9		9.4		45.7	22.9		9.8	43	55.6	22.1		9.3		49.5	15.5		8.6		42.3	46.3	A
10		52.9	43.9		8.8		51.8	32.9	Sj	8.0		58.9	37.7	L	9.0	4	3.7	47.2	K	8.7	23	13.2	6.2	M
10		54.8	39.4		9.2	24	18.9	41.8		9.2	44	20.5	31.5		9.5		7.8	28.9		9.5		40.9	24.6	
9.5	8	11.5	54.4		8.2		25.2	20.2	B	9.8		31.1	2.6		9.4	5	59.3	9.3		8.9		43.2	11.9	Sj
8.1		37.3	45.7	K	9.3		28.7	20.2		9.2	45	22.0	49.1		9.3	6	9.9	47.4		10	24	27.7	7.2	
9.5	9	4.2	27.5		9.1		40.6	55.0	R	9.9		45.3	47.1		9.5		10.0	21.4		8.9		34.3	45.2	
9.8		12.7	30.7		9.6	25	27.5	6.0		9.2	46	5.2	37.2		6.8		12.1	10.7	K	8.8		46.4	25.0	K
8.5		20.6	54.9	K	9.4		32.6	51.4		9.8		20.5	17.6		9.8		21.9	10.2		8.6		50.8	5.7	R
10		22.5	56.8		9.8		53.2	10.5		8.8	47	19.0	48.9		9.5		24.8	50.7		9.1		51.0	27.3	K
9.0		26.5	52.6	K	9.6	26	19.5	49.6		8.3		43.7	30.8		9.1		55.1	11.6		8.5	25	46.9	56.8	K
10	10	2.9	36.5		9.1		45.2	10.6		8.7	48	15.2	31.2	K	9.1	7	11.3	25.0	K	9.7	26	14.2	6.1	
9.7		3.5	46.7		9.5	27	58.0	8.6		9.7		17.3	42.1		7.9		44.8	48.1	B	9.2		14.3	22.5	
10		4.7	28.2		9.8	28	15.2	20.4		8.2		30.6	19.8	K	9.5		45.8	56.2		9.1		28.4	17.7	M
10		20.2	59.2		9.8		20.3	29.1		10		32.8	37.5		9.0		46.1	9.1		9.5		34.2	29.9	
9.5		29.5	48.0		8.4		28.3	47.0	A	10	49	3.0	9.5		9.8		57.6	40.0		8.3		39.5	23.2	Sj
9.5		59.6	22.5		10		51.7	5.3		9.3		27.4	45.1		9.2	8	17.1	12.2		9.5		58.6	9.9	
9.3	11	6.8	50.4		9.5		52.5	42.4		9.8		32.5	12.7		9.1		28.7	11.0		10	27	51.9	9.9	
6.5		13.9	1.4	K	8.0	29	29.4	25.2	B	9.5		42.2	49.1		9.5		47.2	4.1		10		53.9	41.2	
9.2		18.2	5.8		9.5		44.0	43.5		9.3	50	5.2	29.5		9.5	9	29.9	27.5		8.5	28	13.7	15.1	K
10		38.6	22.8		8.5	30	10.8	7.5	B	10		24.9	40.4		8.2		33.5	36.2	K	9.7		17.0	35.4	
9.2	12	0.2	53.7	K	10		28.0	28.1		9.3		26.1	23.9		7.5		53.4	25.5	K	9.3		41.1	33.2	
9.6		30.4	8.0		8.7		46.3	48.3	K	9.3		30.7	27.0		9.9	10	12.5	28.4		8.3		45.0	16.4	Sj
10		36.7	23.0		7.9		50.9	49.1	K	9.8	52	7.4	53.0		8.7		18.9	1.0		9.4		49.5	15.1	

6262: 1:83 42′20″.1 B_3, Ep. 1882.90 6295: 46:39 36′23″.1 B_3, Ep. 1882.90
6437: 33:92 B_8, 35′59″.2 B_4, Ep. 1872.88

6501—6520

m	23h m	s	−14° ′		
9.5	28	59.9	8.8		
8.9	29	21.6	21.3	K	
9.8		23.2	13.5		
8.0		33.1	21.7	Sj	
9.7		34.4	5.0		
7.8		50.5	8.1	K	
10		53.4	4.3		
10	30	28.4	43.0		
8.0	31	2.2	30.7	K	
9.8		8.3	34.1		
9.8		29.8	1.3		
9.9		36.2	35.2		
10		36.5	11.8		
9.6		41.4	50.6		
10	32	1.0	45.0		
9.7		16.3	45.9		
9.1		36.0	6.7		
9.5		38.1	13.4		
9.9		41.8	2.5		
9.4		58.0	40.6		

6521—6540

m	23h m	s	−14° ′		
9.5	32	59.1	36.5		
9.4	33	10.2	31.8		
8.3		47.6	16.9	M	
9.6	34	12.2	4.7		
9.5		12.8	17.2		
9.5		18.7	0.0		
9.4		31.7	41.8		
10		33.4	18.1		
9.5		46.0	36.4		
9.1		52.3	52.4		
9.2	35	15.1	27.4		
10		15.9	23.1		
9.8		26.8	53.8		
8.9	36	22.7	38.0	M	
9.0	37	3.0	12.5	R	
7.5		52.6	28.9	K	
9.7	38	20.2	22.2		
9.6		27.6	18.5		
7.8		30.5	15.8	K	
7.9		49.5	9.7	K	

6541—6560

m	23h m	s	−14° ′		
9.8	39	6.2	28.7		
10		15.1	20.2		
9.8		16.2	32.3		
9.8		25.0	41.1		
10		31.1	30.0		
9.2		31.8	55.5	A	
9.8		44.4	41.5		
9.5		45.7	16.6		
10	40	25.6	9.9		
7.6		27.7	43.0	K	
9.4		54.1	0.6		
8.5	41	10.0	41.3	K	
9.0		26.5	58.0	K	
9.8		34.1	16.1		
10		37.1	36.4		
9.5		41.3	7.3		
8.8		48.3	21.6	Sj	
8.7		48.4	6.3	K	
9.6	42	2.2	7.9		
10		55.2	6.5		

6561—6580

m	23h m	s	−14° ′		
9.8	43	27.9	31.0		
9.4		46.2	10.9		
8.1	44	10.2	47.2	Sj	
9.0		36.3	39.9		
9.8		49.8	3.0		
9.3	45	2.5	54.3		
8.2		21.2	53.5	B	
9.6		33.7	6.5		
10		42.5	4.0		
9.8		48.3	10.0		
10	46	30.3	12.4		
9.0		35.4	48.6		
9.5		43.8	26.0		
9.5	47	3.4	31.9		
9.3		34.3	42.2		
9.9		38.5	26.1		
8.4	48	2.1	33.0	Sj	
9.4		2.3	39.3		
7.5		20.4	46.5	A	
9.8		26.0	21.9		

6581—6600

m	23h m	s	−14° ′		
8.3	48	48.6	19.2	M	
9.7		49.4	46.2		
9.7		50.8	52.8		
9.7	49	40.1	49.0		
9.1		49.8	48.3		
9.8	50	32.5	28.8		
10		58.4	6.0		
7.0	51	7.5	56.0	Sj	
9.4		16.0	12.7		
8.7		40.2	45.3	A	
9.8		49.2	7.9		
8.8		58.9	7.1	M	
9.8	52	24.0	13.0		
9.5		36.0	56.8		
9.5		43.7	29.8		
9.5		48.2	31.8		
8.6		54.1	11.9	K	
9.5	53	28.0	4.2		
9.8		51.2	29.6		
9.3	54	5.6	37.5		

6601—6606

m	23h m	s	−14° ′		
9.7	54	35.9	12.0		
9.9		36.9	42.1		
6.5		48.7	13.2	K	
9.4		53.6	58.7		
8.8		55.7	14.3	K	
9.5	55	4.1	52.9		

6607—6611

m	23h m	s	−14° ′		
9.8	55	34.2	16.8		
9.0	56	7.6	2.2	K	
9.0		15.1	53.5		
9.4		20.3	5.5		
8.8		27.0	29.5	K	

6612—6616

m	23h m	s	−14° ′		
9.2	56	29.7	14.7		
9.3		30.7	8.1		
9.3	57	35.2	8.3		
9.3	58	2.8	10.7		
10		22.4	19.3		

6617—6621

m	23h m	s	−14° ′		
9.5	58	27.2	54.5		
9.8		54.8	43.0		
8.8	59	21.0	33.0		
9.3		56.5	36.5		
9.8		56.6	11.2		

Zone −15°

1—20

m	0h m	s	−15° ′		
9.6	0	21.0	27.3		
9.1		26.3	27.2		
8.3		34.1	1.8		
9.2		37.5	25.7		
9.5		49.4	40.0		
9.2		51.4	12.1		
7.0		52.9	38.0	A	
9.1	1	0.0	43.7		
9.1		16.4	15.3		
8.8		25.1	54.7	A	
8.8		56.1	22.8		
8.5	2	10.0	19.4		
9.5		26.5	6.0		
8.5		29.3	25.0		
9.8		33.7	9.1		
8.6		43.6	58.5	A	
8.8		51.8	28.4	A	
8.0	3	1.2	15.0	A	
9.5		50.0	1.9		
9.5	4	3.3	29.3		

21—40

m	0h m	s	−15° ′		
9.9	4	29.7	25.7		
8.6		50.8	57.9	A	
9.4	5	7.0	29.7		
9.5		37.7	52.3		
10	6	10.6	16.5		
9.0		14.2	44.9		
9.6		32.5	28.7		
8.5		53.7	15.0	B	
10	7	2.7	41.3		
7.0		5.1	13.9	B	
9.5		6.6	7.1		
6.7		15.7	36.7	B	
9.8		34.6	25.9		
9.0	8	10.0	1.9	M	
9.3		13.0	26.7		
9.1		48.0	23.9	A	
9.8		48.4	32.2		
8.3		55.5	17.0	A	
9.5	9	19.2	53.2		
9.3		25.1	15.3		

41—60

m	0h m	s	−15° ′		
8.3	9	30.7	31.6	WZ	
8.8		40.6	9.3	A	
9.4		41.4	30.4		
8.9		51.8	48.1		
10		52.9	59.0		
9.0	10	2.2	36.6		
9.4		24.0	25.1		
9.1		26.5	42.3		
8.5		42.1	7.2	A	
9.6	11	50.2	53.0		
9.8		55.9	28.4		
8.8	12	0.6	38.5	A	
9.3		24.6	39.8		
9.8		27.2	7.0		
9.1	13	23.5	16.6		
9.4		32.5	20.1		
9.5	14	32.6	35.8		
8.8	15	43.0	35.8		
9.8	16	22.6	43.1		
8.5		34.4	9.0	A	

61—80

m	0h m	s	−15° ′		
9.1	16	54.3	4.5		
10	17	12.4	9.7		
9.0		26.4	32.0		
9.2		42.3	55.8		
9.8		44.7	29.5		
10	18	15.1	30.9		
10		27.9	16.8		
9.8		46.0	22.9		
9.5	19	35.7	56.8		
8.2		51.5	3.4	A	
9.6	20	26.4	45.0		
9.5		31.5	11.6		
9.6		31.5	0.2		
8.8	21	24.0	12.6		
9.7		26.1	34.8		
10		40.6	11.6		
10		49.1	25.4		
8.0		54.4	52.1	A	
9.4	22	0.0	0.7		
9.1		7.8	34.1		

81—100

m	0h m	s	−15° ′		
9.4	22	11.4	12.0		
9.7		25.8	11.6		
10		26.1	57.5		
6.2		31.0	39.8	L	
8.7		39.8	13.4	M	
8.1	23	7.6	55.2	A	
9.4		21.7	20.5		
9.3		23.8	28.9		
9.8		27.9	46.8		
9.5		57.7	12.2		
9.4	24	15.5	45.9		
9.4		22.0	43.1		
9.7		42.2	29.6		
10		59.7	8.4		
8.9	25	19.5	42.3	M	
9.7		30.3	33.0		
9.7	26	1.2	58.7		
9.0		23.3	5.3		
9.0		24.7	7.8	A	
9.4		25.3	27.5		

84: 31°04 39′53″4 B_4, Ep. 1871.99

101—160					161—220					221—280					281—340					341—400				
0h			−15°		0h—1h			−15°		1h			−15°		1h			−15°		1h—2h			−15°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.8	26	51.6	40.5		9.5	46	25.6	48.3		9.1	5	45.8	29.7		9.3	26	41.7	42.4		9.2	47	12.1	45.2	
9.7	27	20.9	28.1		9.3		32.6	20.9		8.9		47.8	32.1	A	9.0	27	40.3	40.9		9.0		15.5	31.2	
9.0		50.6	37.4		8.9		43.9	25.4		9.3		51.3	2.4		8.5		59.8	9.7		9.8		29.7	11.9	
9.8	28	5.0	31.1		9.8	47	15.0	25.6		9.1		52.1	25.1		9.3		59.9	13.9		9.5		49.2	54.1	
8.3		20.4	31.8		9.7		24.5	29.4		9.8		52.4	43.9		9.4	28	38.0	56.9		9.8	48	35.5	56.9	
9.2		29.4	17.1		9.8		49.4	36.1		9.4	6	28.7	16.0		10		43.6	21.6		9.6	49	12.6	28.2	
9.1		39.7	22.5		10	48	29.1	52.8		10		33.9	36.1		9.7		52.5	26.6		9.7		17.9	29.7	
9.6		43.7	33.6		9.1		33.0	8.6		9.4		36.8	2.3		9.1	29	14.1	34.3		9.8		22.2	43.4	
6.8		45.2	46.1	B	9.6		35.4	22.4		9.0		43.1	37.7		8.0		43.6	7.8	A	9.5		29.3	14.6	
9.3		54.6	39.0		10	49	8.8	34.7		9.0	7	0.2	47.0		10	30	1.5	46.9		9.6	50	28.8	39.1	
9.2	29	23.4	30.1		8.0		19.1	27.2	R	10		7.6	31.4		9.0		46.2	40.3		9.1		33.4	44.3	
9.3	30	23.8	24.9		8.2		43.1	54.2	A	8.7		21.4	2.8		9.8	32	20.5	8.4		8.0	51	4.0	28.8	
9.5		29.0	20.7		9.5		57.5	38.1		8.2	8	0.3	55.3	A	8.6		23.8	26.8	A	9.5		10.3	43.3	
9.8		31.8	6.2		9.3	50	4.7	36.3		9.6		13.4	10.4		10		24.5	16.2		7.0	52	12.7	49.6	A
9.4	31	3.3	47.8		8.5		19.7	39.4		9.2		38.5	27.2		9.9		29.7	53.3		9.5		29.1	45.1	
8.5		20.5	1.8	M	9.1		40.3	59.9	A	9.3	9	9.7	13.0	A	9.8		42.2	52.4		10	53	17.9	1.5	
10	32	30.1	23.8		9.9	51	26.1	53.8		10		11.8	43.7		7.8	33	44.5	37.0	A	9.1	55	50.1	14.5	
8.6		32.4	5.9	A	9.0		35.5	28.1	A	9.0		40.4	22.8		9.0	34	27.8	57.3	A	9.0		54.4	9.1	
9.3		34.8	31.8		9.1		38.6	56.3	A	9.0		48.3	49.7		9.2		29.0	21.3	A	9.2	56	10.7	51.7	
9.5	33	16.4	48.5		9.8	52	4.1	29.5		9.5	10	14.1	51.3		9.0		37.9	4.1		9.0		17.8	57.2	
9.5		17.3	55.3		9.5		5.2	4.7		9.1		17.2	10.7	A	9.8		38.5	23.8		9.5		30.2	0.4	
9.5		17.4	49.1		9.6		12.8	19.9		9.4	11	9.9	24.8		9.1	35	45.7	46.7		9.4		49.0	36.2	
9.8		18.0	45.9		9.2		47.6	33.1		9.8		44.9	49.9		9.7		56.2	47.6		8.9		51.5	9.5	
9.7		25.9	48.2		10		50.7	13.1		8.7		54.7	36.5		8.0		56.6	13.2	A	9.6	57	22.6	16.9	
9.9		26.3	41.7		9.4	53	10.6	35.6		9.0	12	3.7	22.5	R	9.0	36	32.7	4.0	A	9.3		26.9	44.2	
9.7		41.5	23.4		9.7	54	1.1	47.0		9.4		31.7	6.1		9.5		45.0	30.8		9.8	59	7.5	9.0	
9.5	34	20.0	52.8		9.2		34.7	44.8		8.0		41.4	40.5	A	7.3	38	5.0	17.4	A	8.0		35.1	8.8	
9.3		56.9	51.4		9.8		49.3	15.1		10		57.5	52.2		9.3		5.6	26.5		9.0	0	7.6	5.5	
9.8	35	11.7	21.4		9.9	55	39.7	39.5		9.9	13	21.0	59.9		8.8		31.2	54.2	A	9.8		20.8	25.5	
9.8		13.6	14.3		9.5	56	16.4	31.9		9.2		56.0	20.4	A	10		34.5	15.9		9.8		41.3	55.0	
9.5		35.6	8.9		8.5		17.9	17.2		9.4	14	13.5	25.6		9.8		45.9	21.2		9.4		53.1	19.4	
9.3		58.7	39.0		9.3		56.0	22.2		9.6		22.5	47.9		9.4		58.8	3.7		9.8	1	24.2	26.0	
10	36	14.0	31.0		9.6	57	22.9	2.0		9.7		35.7	30.6		9.8	39	5.9	7.6		9.3		42.6	39.9	B
9.8		29.9	26.8		8.5		58.3	41.0	A	9.2		40.0	48.4		10		48.8	7.3		9.8		43.8	27.7	
8.1	37	1.7	1.8	A	9.4	58	7.0	7.4		8.9	16	22.9	8.2		9.8	40	1.0	37.0		9.7		44.9	18.1	
9.0	38	16.4	31.3		8.5		26.0	17.8		9.9		39.5	29.1		9.7		47.6	21.4		9.8	2	35.1	3.9	
9.0		18.7	7.7		9.5		28.4	59.9		9.3		43.5	2.6		9.8		53.0	14.5		7.3		48.3	34.3	A
9.1	39	2.1	30.1		9.8		32.8	27.1		9.6		45.6	42.4		8.5		53.7	23.6	A	10	3	22.8	29.8	
9.0		41.1	33.3		9.0		35.7	39.6	A	9.5		48.7	53.8		9.8	41	13.4	33.5		9.2		58.0	58.5	
9.3		47.6	46.0		8.9	59	13.0	4.6		9.5		49.4	57.7		9.1		19.0	40.8		6.8	4	6.7	45.1	A
9.3		52.3	12.8		10		18.3	37.2		10		58.2	32.7		7.3		33.7	29.3	A	7.2		12.0	22.4	A
9.1		58.1	43.9		9.4	0	13.1	13.2		9.3	18	7.5	27.5		9.2		35.0	33.3	A	8.5		30.2	5.9	
9.5	40	2.9	51.5		9.1		33.9	40.5		8.0		10.9	44.6	A	9.5		41.6	36.7		8.8		42.7	7.8	
9.3		10.6	13.7		9.1		55.9	30.5		9.1		22.9	30.0	A	9.0	42	33.2	48.7	A	9.4		57.3	32.4	
8.4		57.3	5.9		9.3	1	4.0	0.0		9.8		27.0	4.3		9.5	43	46.5	32.1		9.5	5	5.6	46.9	
8.0	41	17.9	32.2	A	8.6		14.6	57.0		5.3		28.9	21.3	A	8.7	44	6.5	7.1	A	9.8		8.8	33.6	
9.8		48.6	36.1		10		21.7	58.2		9.6		51.2	59.8		9.5		12.8	35.9		7.7	6	21.1	35.5	A
9.1		49.8	25.3		9.6	2	43.5	51.3		9.5	19	27.8	52.2		8.5		36.9	52.4		9.2	7	19.7	28.1	
9.6	42	43.7	23.5		9.2		45.0	39.5		9.1		36.2	47.0		9.4		57.5	37.9		9.3		25.6	41.4	
9.3	43	1.9	35.1		7.2		45.2	1.3	B	9.8	20	14.6	26.2		9.4		59.9	37.5		9.4	8	10.4	12.8	
9.5		18.7	51.4		7.3		56.1	11.6	A	10		24.0	7.5		8.6	45	13.9	40.5		9.4		14.2	15.3	
8.6		30.3	37.6	A	9.6	3	6.7	4.2		9.9	21	4.2	9.1		8.9		19.5	7.5		9.6		24.1	7.9	
9.5		34.5	2.3		9.5		34.2	4.2		8.5	22	19.9	54.9		9.3		19.7	48.8		8.8		26.9	59.5	
9.0		43.4	57.5		9.4	4	4.1	12.2		9.0	23	23.5	10.5		9.0		29.8	15.5	A	9.2		44.1	0.7	
9.5	44	1.0	28.1		9.8		4.9	4.4		9.2	24	8.7	30.7		9.5	46	0.1	30.3		10		52.8	11.7	
9.1		19.3	40.0		9.8		13.0	40.1		10		39.0	48.0		8.5		2.6	10.4	A	8.4	9	7.4	23.4	
9.4		40.0	2.5		8.0		44.3	19.6	A	9.5		39.0	39.7		9.0		13.6	54.0		9.4	10	11.5	1.8	
9.0		49.8	39.1		9.8	5	4.2	52.3		9.1		47.4	52.1		9.8		22.3	50.5		9.8	11	31.1	32.5	
9.4	45	53.4	31.5		9.1		8.8	12.4		7.8	25	6.3	14.3	A	8.4		44.2	41.8	A	9.5	12	12.2	21.7	
8.6	46	14.8	38.5	A	10		10.1	22.0		9.8		17.9	39.5		10	47	5.0	28.8		9.0		49.8	0.2	A

401—460				461—520				521—580				581—640				641—700			
	2h		—15°		2h		—15°		2h—3h		—15°		3h		—15°		3h		—15
m	m	s	′		m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
7·3	13	11.9	4·5	A	7·0	29	41.1	17·4	A	9·2	50	1.6	16.7		9·5	14	5.0	49.5		9·4	35	36.2	56.9
8·0		21.4	17·5	A	8·5		51.4	50.0	A	9·0		24.0	53.3		9·8		11.2	12.5		9·1		50.4	19.2
9·4		35.6	16.3		9·1	30	33.3	40.3	A	9·4	51	23.8	8.4		9·0		36.5	51.4		9·5	36	5.0	37.9
9·6		40.6	17·4		9·0		53.2	14.3	A	9·5	52	1.8	17.2		7·1	15	14.3	58.6	A	9·8		12.9	39.1
9·1		46.0	54·9		9·5	31	35.4	41.5		8·7		17.3	37.3	A	9·8		39.6	11.3		9·8		39.5	27.4
8·6		52.6	55.8	A	9·0	32	18.5	37.2	A	8·9		48.4	24.8	A	9·8		43.4	11.1		9·4	37	31.5	27.2
9·0	14	37.1	14·1	A	10		32.8	29.2		9·8	53	23.1	20.3		9·3	16	21.5	56.6		9·7	38	15.3	36.1
9·0		42.2	17·9	A	9·2		47.9	40.0	A	9·5	54	8.6	56.9		9·5		33.7	47.3		9·2		34.8	6.4
9·5		44.4	27.0		9·8	33	9.6	52.2		10		9.2	8.7		7·1		39.2	24.1	B	7·0		49.7	49.0
8·7		47.0	7·6	A	9·1		24.0	1.7		9·5		31.5	53.1		9·1		44.8	48.8		9·5	39	4.0	25.4
9·4	15	3.2	9·4		9·5		29.3	1.9		9·1		54.0	24.2	A	9·7	17	10.9	36.5		9·2		24.5	36.3
8·5		5.0	35·5		8·9		29.5	3.0	B	8·0	55	44.5	50.7	A	8·7		25.0	41.1	B	9·0		28.6	37.0
9·5		9.1	54·9		6·8		32.4	4·3	A	9·2		52.7	12.5	A	9·1		42.4	1.1		9·8		39.9	15.8
8·0		32.6	54·0	A	9·8		48.2	15.7		9·8	56	55.7	36.1		8·7		53.2	10.0	B	8·0		50.8	41.9
10		38.7	34·4		8·9	34	2.0	2.3	K	9·0		58.6	8.0	A	7·8	18	31.3	32.7	A	9·5	40	10.3	46.5
7·7		50.1	33·9	A	9·4		24.8	35.0		9·5	57	27.1	2.9	A	9·5		42.0	38.4		9·5		22.1	43.4
9·8	16	33.0	49·5		7·5		37.9	43.4	B	8·8		29.0	38.6		9·3	19	31.6	24.6		8·6		34.2	47.2
9·1		52.1	8·6		6·3		41.5	10.2	B	9·3		53.5	30.4		7·2		40.1	52.1	B	9·3		36.9	33.6
9·9	17	4.3	3·4		9·6		53.8	35.6		9·2	59	9.7	12.4	A	9·8	20	14.3	43.9		8·5		38.9	13.2
9·5		19.2	16.0		9·9	35	20.0	45.6		9·3		10.4	30.7	A	9·4		25.5	19.0		8·3		45.5	29.4
10		28.9	21.0		9·5		35.4	40.2		9·1		37.2	34.0	A	8·5		48.6	43.1	A	9·8	41	3.1	42.0
9·8		30.5	49·1		9·8	36	12.5	43.9		9·7		53.8	26.5	A	9·5	21	10.0	31.0		10		7.8	59.3
9·1		52.1	4·4		9·8		20.9	58.0		9·4	0	4.0	20.5	A	9·5		13.0	40.0		9·1		9.4	8.0
9·5	18	15.6	51·2		9·3		26.4	44.3		9·4		17.2	51.7		9·6		22.8	35.0		8·0		14.3	33.4
9·8		30.5	30·4		9·5		54.2	13.0		9·8		43.5	36.7		9·5	22	47.6	20.6		9·1		34.8	2.5
6·0	19	6.7	59·3	A	9·1	37	0.1	23.4	A	9·4		51.6	41.6		9·8		53.1	29.1		9·8		38.0	22.5
9·5		11.2	57·5		9·6	38	26.5	28.7		9·3	1	2.2	31.5	A	9·4	23	25.6	45.8		9·6	42	12.0	33.1
9·8		11.4	19·3		9·3		48.6	44.6		9·1		52.2	27.0		9·3		39.0	37.6		9·5		22.9	9.8
9·2		49.4	37·5		9·0	39	10.4	48.6	A	9·6	2	2.7	36.0		9·0		55.1	21.1	A	9·8		29.6	27.5
8·3	20	3.1	8·0	B	10		21.5	16.9		9·8		24.3	10.6		9·8		59.3	57.5		9·3		32.6	43.5
9·0		11.3	13·5	B	7·5	40	1.7	53.5	A	8·3	3	55.4	59.3	A	9·5	24	17.2	1.0		9·3		38.2	27.2
9·1		19.4	41·1		9·1		7.0	34.5		9·1	4	0.7	45.4		9·4		30.0	0.3		9·4		45.1	42.2
8·9		58.8	53·5		8·0		18.7	59.0	A	9·1		35.8	49.3		9·4	25	38.4	4.5		9·8	43	1.6	46.2
9·4	21	38.5	24·7		9·5	41	28.9	50.3		7·7		58.3	28.7		9·0	26	4.3	0.9	K	9·8		43.0	11.0
9·4		41.4	12·5	A	9·5		57.6	37.3		9·5	5	11.3	55.6		10		14.7	36.9		9·4		43.5	33.2
9·8		50.8	23·9		9·5	42	16.2	43.5		9·8		34.9	16.2		9·5		25.8	30.4		9·0		55.2	22.8
8·3		54.3	56·9	A	8·6		18.1	24.5	A	9·8	6	12.3	0.9		6·3	27	1.6	36.8	A	8·0	44	20.4	8.2
9·8		56.0	25·5		8·4		26.3	18.0	A	9·6		46.1	36.7		10		2.1	47.3		8·5		25.4	40.0
9·0	23	10.5	16·4	A	9·5	43	7.6	34.7		9·5		51.0	18.5		9·7		20.2	19.4		9·8		33.2	40.0
9·1		47.6	36·0		9·8		14.5	16.0		9·4	7	29.7	23.1		8·0		35.6	12.0	B	9·6	46	13.5	4·1
9·3	24	1.5	21·5		9·5		36.7	49.0		9·4		45.2	36.2		9·1	28	38.1	18.0	B	9·7		13.6	59.2
7·5		10.7	46·6	A	9·0		38.4	6.1		8·8		46.1	22.7		8·9	29	11.5	15.6	A	9·5		36.5	50.2
9·0		15.8	48·9	A	10		59.6	23.3		8·8	8	1.8	48.6		9·5		59.4	0.7		6·8		49.1	24.2
9·5		25.6	7·4		9·5	44	1.3	19.0		9·5		23.4	0.7		9·4	30	15.7	32.8		10	47	34.9	37.2
8·5		39.9	57·6	B	8·5		5.4	58.3	A	9·6		39.4	20.5		9·3		26.7	36.4		9·9		45.1	29.2
10		47.3	8·7		9·9		26.5	16.0		9·5		54.1	33.4		9·5		34.9	50.1		8·9	48	2.2	22.2
8·9		49.9	54·8	B	9·4		29.4	31.8		9·8		56.0	44.0		7·0	31	3.0	57.6	A	7·0		17.3	20.2
9·0	25	2.2	45·4		9·2		56.3	14.2		8·0	9	5.7	20.3	B	9·7		17.8	19.7		9·3		25.0	26.2
4·5		13.1	52·5	A	9·8	45	26.8	22.5		9·3		8.7	15.5		9·3		29.5	0.7		9·3		59.2	13.2
9·7		39.0	14·1		9·5		30.7	48.8		9·7		52.3	12.3		9·4	32	17.3	27.0		9·3	49	33.0	54.2
8·5	26	10.6	21·6		9·5	47	11.3	28.8		9·2	10	5.4	43.2		10		55.7	38.3		9·5	50	5.5	49.2
9·9		12.3	5·7		9·9		13.5	31.9		9·6		43.1	12.8		10	33	3.9	36.3		9·2		29.4	28.2
7·7		21.2	0·1		9·5		48.1	20.6		9·5		45.8	37.4		8·8		9.5	54.4		8·3	51	50.8	31.2
9·1		34.0	58·4	A	10		52.3	43.2		9·8	11	36.6	17.0		6·0		29.1	41.8	B	10	52	7.9	43.2
8·6	27	14.5	15·7		9·9		59.1	27.9		9·8		53.2	52.2		9·8		35.0	31.9		9·6		28.8	22.2
8·6	28	15.8	49·5	A	10	48	16.5	24.3		9·8	12	2.1	26.5		8·3	34	3.3	12.0		8·0		41.2	32.2
9·3		16.8	32·6		9·5		24.0	9.3	A	9·8		2.3	52.0		9·8		41.3	12.5		9·1	53	34.0	51.2
7·0		45.6	34·5	B	9·7	49	16.9	24.3		8·3		7.1	24.8	A	9·5		44.4	39.5		9·2		43.1	54.2
9·0	29	1.7	52·4		7·2		39.1	36.1	A	10		7.6	35.7		9·5		59.4	30.0		9·7	54	5.9	34.2
9·5		9.4	5·0		9·5		46.1	14.5		9·8		44.5	5.1		9·8	35	15.4	36.4		9·8		27.3	13.2

701—760					761—820					821—880					881—940					941—1000				
	3h—4h		−15°			4h		−15°			4h		−15°			4h		−15°			4h—5h		−15°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.2	55	0.2	18.6		9.0	11	49.6	53.4		9.3	30	21.6	38.6		10	45	31.3	28.8		9.8	58	39.5	31.2	
9.1		10.3	36.5		10		54.2	9.3		9.5		25.2	18.7	A	10		44.3	31.0		9.9		55.5	5.8	
9.7		31.3	30.7		9.5	12	8.9	28.8		9.5		39.2	47.3		8.0		48.9	8.2	B	9.5	59	30.5	4.0	
9.3		35.9	18.6		9.4		45.0	58.7		8.5		41.9	59.7		9.5		55.1	41.6		8.8		37.7	38.6	A
9.3		36.7	45.8		8.7		55.9	31.2		9.5	31	36.6	27.5		10	46	14.9	55.0		9.5		44.4	46.9	
10		42.8	32.9		10	13	21.9	7.5		10	32	16.3	19.7		9.5		27.5	48.4		9.5		49.7	37.0	
9.5	56	20.4	20.5		9.2		30.4	7.2	A	9.8		16.5	58.9		9.1		27.8	54.7	A	9.0	0	4.1	58.8	A
8.6		24.6	32.7		9.4	14	50.5	49.3	A	8.8		25.2	14.4	A	10		39.3	4.1		9.9		34.0	33.7	
9.5		27.0	35.4		8.8		50.7	27.2		9.9		25.8	1.6		9.8		42.5	17.8		9.6		57.0	5.3	
9.7		47.3	13.3		9.3		52.7	25.2		9.2		28.9	30.3	A	9.6		50.7	1.6		6.5	1	38.9	17.5	A
9.9		58.2	3.8		8.2	15	23.5	54.0	A	9.8		57.9	56.7		9.8		56.9	59.4		10	2	2.4	17.4	
8.8	58	0.4	25.9		9.5	16	25.2	8.3	B	9.1		58.8	48.1	A	10	47	33.1	52.5		8.5		4.7	40.8	A
9.8		1.2	16.7		9.4		28.6	5.2	A	9.2	33	0.7	59.6	A	8.3		35.8	11.0	A	8.3		52.7	51.0	A
9.7		18.2	50.4		9.4		32.0	48.4	A	9.9		27.6	27.7		10		49.1	42.7		9.6		52.7	19.2	A
8.5	59	3.9	21.7	B	10	17	18.7	26.4		9.7		57.8	46.9		9.2		51.1	55.0		9.4		55.5	51.2	
9.2		10.3	15.1		9.5		26.7	14.2		9.4	34	2.4	4.4		10	48	23.8	28.1		9.5	3	19.4	0.4	A
8.0		19.3	7.6	B	10		39.6	21.6		9.5		7.9	54.3	A	8.9		45.5	35.8	A	9.5		25.2	59.0	
10	0	16.5	37.9		9.5	18	1.1	55.7		9.1		35.8	7.1		9.9		46.6	39.6		9.8		44.1	10.9	
10		48.0	20.5		9.3		7.1	22.0		9.5		39.5	57.4		9.4	49	8.0	39.0	A	9.1		44.6	36.2	
8.5		51.4	49.7		8.5		17.8	1.3	A	9.4		57.3	9.8		10		8.9	10.3		9.7		45.2	49.4	A
9.5		52.5	37.5		9.3		25.1	55.8		10	35	25.7	48.5		9.5		10.1	22.5		10		55.3	19.1	
9.2	1	14.4	16.6	A	10		32.4	35.1		9.4		42.6	4.2		9.8		17.3	25.7		8.6	4	0.8	53.7	A
9.5		16.3	6.8		9.6		39.1	7.0		8.7		48.6	46.6	A	7.7		22.0	6.7	A	9.0		45.6	54.5	A
9.8		29.1	19.5		9.5		39.2	11.7		9.3		56.1	30.8	A	7.7		51.5	36.8	A	9.4		46.0	31.1	
9.8		34.6	20.7		9.7	19	11.5	15.9		8.8	36	20.4	36.5	A	10	50	5.3	51.8		8.5		51.7	14.2	B
9.4		46.8	35.3		7.8		14.1	59.1	A	9.8		32.6	51.0		9.5		32.4	1.8		9.6	5	1.6	6.0	
10	2	3.9	9.6		9.1	20	4.0	53.0	A	9.1		33.4	1.1		9.6		46.1	32.1		9.6		4.8	20.6	
9.7		47.4	5.4		9.2		19.5	48.0	A	7.9		35.3	53.5	A	9.8		52.7	45.0		9.1		41.8	14.8	A
9.4		55.4	31.1		9.6		26.3	3.7		9.5		52.9	55.1		9.1	51	51.4	43.8		9.0		45.4	48.3	A
8.3		50.4	10.8	Sj	9.7		59.8	26.3		10		56.4	37.8		7.7	52	0.3	0.4	B	9.7		57.0	46.7	
9.0	3	33.7	50.1		9.2	21	9.6	20.9		9.8	37	12.7	57.6		9.6		5.6	24.7		7.3	6	1.1	7.7	A
9.0		34.2	16.8		9.8		13.1	18.0		9.6		35.2	27.5		9.0		21.9	0.4		9.0		13.0	16.5	A
7.5		49.3	25.0	B	9.2		27.4	40.1	A	9.3		49.5	43.0		10		30.6	39.1		9.1		38.5	4.3	A
9.5		56.0	13.2		7.0		29.8	30.2	A	9.7	38	3.5	31.0		8.4		45.5	58.1		9.0		44.1	53.5	A
9.3	4	3.6	38.2		9.5	22	9.2	54.3		9.5		20.9	37.6		var		59.1	1.8	B	9.8	7	13.6	50.3	
9.1		24.8	10.6		8.6		12.1	17.9	A	9.4		39.4	38.8		9.0	53	11.6	20.0		9.2		29.1	13.3	A
10		25.3	47.4		9.2		25.2	33.3		9.5	39	8.8	35.4		9.0		15.0	35.8		8.5		38.5	48.9	A
9.2		25.7	8.7	K	8.9		49.6	21.3	A	8.5		10.3	11.8	A	9.7		26.6	19.8		8.0		45.7	59.6	B
9.8		50.9	47.8		9.9	23	32.2	24.3		9.4		21.1	48.5		9.4		31.8	45.6		9.3		50.6	11.2	A
10	5	19.0	37.5		9.2		55.5	24.6	A	9.8		30.8	36.6		9.8		39.0	10.5		9.7	8	4.9	28.9	
9.3	6	29.4	1.5		10	24	22.1	48.1		9.0	40	0.7	0.7	A	9.0	54	0.0	58.0		9.0		21.2	58.5	A
10		42.5	30.6		9.9		33.4	32.9		9.5		26.5	45.0		9.3		6.4	3.1		9.6		21.8	18.1	
10		44.2	44.9		10		46.2	56.8		9.8		45.7	19.1		9.4		29.4	5.0		9.9		28.9	7.0	
9.4	7	2.0	18.7		9.1	25	4.7	57.3	A	10		52.5	23.3		9.8		35.2	41.4		9.0		32.7	15.8	A
8.4		24.6	24.0		10		53.6	46.2		8.2	41	14.8	25.7	A	9.2	55	24.0	27.1	A	9.5		37.4	45.5	
8.9		40.8	1.0	A	9.8		55.6	1.6		9.1		27.3	8.8		9.3		31.7	55.3	A	8.5		38.0	23.4	A
10		40.9	16.6		9.1		57.3	29.1		8.1	42	5.1	29.2		8.5		58.0	54.8	A	9.5		57.3	24.0	
9.3		54.9	8.5		9.4	26	7.5	38.8		8.2		40.9	58.3		9.1	56	7.7	42.3	A	9.3	9	6.9	32.4	A
9.2		59.3	13.3	A	9.4		16.4	30.6		10		56.8	2.3		10		13.2	42.3		9.1		40.2	30.4	A
9.5	8	13.0	13.5		9.5		27.0	11.1		9.7		57.5	7.2		9.8		32.4	3.1		9.5		41.2	15.4	
9.1		14.7	32.0	A	9.4		52.1	36.0		8.5		59.7	52.0		8.0	57	10.5	54.7	A	9.3		52.4	40.0	
9.5		52.4	55.7		9.5	27	16.5	0.6		9.0	43	11.4	59.3		9.4		16.2	41.0		10		53.1	5.5	
9.5		53.5	9.7		9.8	28	10.2	11.5		9.5		20.3	58.0		9.1		17.9	53.9		9.0	10	11.2	14.9	M
8.0	9	25.2	17.5	A	9.4		11.1	41.2		8.5	44	9.0	48.8		9.1		18.6	10.4		9.5		16.3	21.1	
8.8		27.3	27.5	A	9.8	29	2.5	17.0		9.0		14.1	22.5		9.4		28.2	20.7		9.0		21.1	5.7	K
9.4	10	5.0	40.1		9.8		2.6	34.2		9.4		39.3	55.7		9.4		39.3	42.2		9.1		27.1	6.9	K
8.7		5.6	13.2	A	9.4		19.2	53.3		9.5		46.0	38.3		9.5		44.0	6.1		9.6		38.0	51.2	
10		7.5	25.5		9.5		31.3	53.1		9.4	45	2.0	32.2		7.5	58	1.5	9.1	A	9.5		50.8	38.7	
9.1		10.3	46.4	A	8.3	30	10.1	13.4	B	9.4		17.2	43.0		9.4		2.4	51.0		8.5	11	0.0	47.0	A
9.8	11	1.7	46.0		9.2		17.7	11.0	B	8.0		29.0	17.7	B	9.2		35.5	23.7		8.6		0.4	22.6	B

1001—1060				1061—1120				1121—1180				1181—1240				1241—1300			
	5h	−15°			5h	−15°			5h	−15°			5h	−15°			5h—6h	−15°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
7.2	11 1.3	22.9	B	9.8	24 5.8	9.7		8.8	34 27.8	27.4	B	9.8	43 22.3	25.1		9.8	53 56.4	30.2	
9.5	12.4	36.2		10	14.9	59.2		9.5	33.1	12.5		8.3	28.1	29.5	B	8.5	54 14.5	0.9	A
9.5	28.1	30.4		8.5	20.7	55.2	B	9.5	40.0	53.1		10	28.2	22.1		9.0	23.6	43.5	A
10	28.7	37.1		9.4	35.6	26.8		9.5	41.4	28.6		9.5	35.0	36.3		9.2	24.3	38.1	A
9.4	32.6	6.6		9.4	35.6	24.0		7.1	35 2.8	24.8	B	8.9	54.7	32.9	M	10	43.9	18.8	
9.6	38.5	59.8		9.4	38.5	21.8		8.0	20.3	41.6	B	9.5	57.1	31.2		9.8	51.2	38.2	
9.7	12 4.0	13.1		9.1	44.8	8.0	Sj	9.4	26.6	37.4	M	10	44 37.9	44.8		9.4	51.6	27.0	
9.8	24.8	19.3		8.3	25 6.9	18.9	A	8.8	28.2	58.3		10	40.0	58.9		8.7	58.1	32.3	B
9.1	33.5	34.1		10	9.2	4.6		10	43.6	14.4		10	40.5	10.9		7.2	55 7.5	35.4	B
9.5	36.9	28.9		9.8	25.1	41.5		9.8	50.7	32.7		9.8	57.1	52.5		9.5	8.1	58.4	
9.5	43.6	49.8		10	27.4	37.9		9.5	53.5	53.3		9.4	45 8.0	0.4		9.6	30.1	52.2	
9.4	58.0	2.3		8.2	35.9	40.5	A	9.4	57.5	0.4		10	26.2	58.6		9.1	34.0	13.1	
9.3	58.2	26.1		9.3	44.5	22.2	A	9.1	59.1	9.3	A	7.3	29.9	32.6	B	9.1	43.3	42.1	A
8.0	13 21.7	46.0		9.6	47.7	53.4		9.8	36 52.1	13.3		9.5	38.4	1.5		10	53.2	10.9	
9.9	23.6	7.0		9.0	50.8	5.1		9.5	52.8	9.3		9.5	38.4	16.4		9.7	56 10.3	26.4	
8.5	26.7	59.8	A	8.8	55.9	36.0	A	9.5	37 13.1	46.8	A	9.1	38.4	42.0		9.8	12.4	46.5	
9.1	14 16.1	2.3		9.5	26 7.0	26.3		9.4	13.6	11.7		9.8	48.5	51.2		9.3	13.8	16.2	
7.5	44.2	17.6	B	9.5	10.3	55.8		8.8	17.5	28.1		9.0	57.6	52.8		9.2	35.4	44.5	A
10	15 2.1	56.7		9.7	11.0	20.0	A	9.4	22.0	52.7	A	8.3	58.5	35.1	B	9.5	57 26.7	56.1	
9.0	23.9	36.8		9.0	54.8	57.9		9.1	35.0	53.0	A	8.6	46 5.7	30.4	B	9.6	31.2	5.5	
9.5	16 9.8	38.3		9.5	27 15.7	51.1		9.2	41.0	32.1		8.9	6.4	11.4	M	8.4	34.8	40.3	A
9.0	19.3	9.8	Sj	8.0	35.5	23.3	A	9.0	43.5	24.6		9.4	10.8	33.7		9.8	35.5	49.9	
9.3	28.3	35.0		9.4	50.9	36.1		9.8	49.2	51.2	A	9.1	22.1	6.5	K	9.8	49.1	42.0	
9.3	34.9	24.1		9.4	28 13.1	42.8		9.5	49.2	37.6		9.3	33.0	32.2		9.4	58 1.7	8.5	
9.4	46.1	0.9		9.2	32.6	14.5	A	9.8	38 15.7	38.6		9.5	39.5	2.9		8.8	31.8	25.3	
8.9	17 16.4	14.5	M	9.8	32.9	56.9		9.1	26.2	35.9		10	47.2	9.2		9.5	59 14.0	48.9	
9.0	16.6	36.5		9.5	36.4	19.9		10	27.5	6.7		9.2	50.0	1.4		9.8	19.5	38.8	
9.7	22.6	25.2		9.4	47.6	45.5		8.5	29.0	18.0	B	8.8	47 4.6	30.0		9.8	21.6	34.5	
10	18 12.1	51.8		7.2	54.9	49.9	B	9.0	36.7	13.6	M	9.8	8.2	16.4		8.9	0 3.7	7.4	K
9.4	15.9	38.5		9.2	29 20.9	27.4	A	9.7	54.4	8.7		10	25.3	41.6		9.7	18.2	57.1	
10	25.1	50.0		9.8	28.0	11.4		9.0	57.2	18.1		10	30.7	56.3		9.1	25.8	40.4	
9.7	29.7	2.2		8.7	29.9	28.8	A	8.7	39 2.5	6.6	B	7.7	52.4	45.3	A	9.2	56.3	14.8	M
9.7	35.3	59.0	A	8.9	39.8	44.9	A	9.2	6.7	8.6	B	9.8	57.6	8.3		9.8	59.6	51.7	
9.2	38.9	24.5		7.9	41.1	54.6	A	8.5	12.1	55.5	A	9.5	48 8.7	47.5		9.0	1 17.2	11.1	M
8.2	19 37.2	36.0		9.8	41.8	42.8		10	17.3	42.2		9.5	44.6	30.0	A	7.8	36.1	52.4	A
9.1	47.3	35.5	A	9.4	30 3.2	36.6		9.2	22.8	20.9		9.3	49 4.7	31.1	A	10	36.9	24.3	
8.3	20 7.1	16.1		9.4	14.9	33.8		9.0	25.2	51.5		8.8	14.2	13.0	K	9.0	42.9	24.7	
9.2	7.3	36.0	A	9.2	17.5	7.8	A	8.5	33.1	54.2	A	9.3	17.6	54.0		9.8	2 5.8	29.8	
9.0	10.3	39.1	A	9.1	21.8	42.8	A	9.0	35.7	17.7	M	8.5	27.2	55.9		9.8	7.7	28.7	
8.5	11.9	53.3	A	10	27.0	13.7		9.1	43.4	36.0		9.0	32.5	26.8	A	8.0	35.8	40.7	A
9.7	18.4	32.4		8.3	31 12.4	11.5	A	9.7	40 4.2	15.0		8.3	37.8	32.5	A	9.5	38.3	41.1	
9.6	21.0	46.0		9.7	14.5	20.3		9.1	5.0	2.0	M	9.9	39.6	0.9		9.8	45.9	17.9	
9.7	22.1	22.4		9.5	27.9	7.6		9.8	19.3	38.5		9.9	50 12.1	29.0		9.4	53.0	0.0	
9.6	27.0	21.1		9.3	28.9	2.1	A	10	21.6	11.8		9.7	26.8	34.6		9.5	54.5	1.1	
10	38.4	41.7		9.7	46.7	40.3		9.2	35.0	0.1		9.3	51 2.4	32.5		9.2	55.1	5.3	A
9.6	42.3	20.9		9.8	32 10.3	26.7		9.2	46.2	20.4	M	7.2	7.3	25.7	A	9.5	3 13.7	37.6	
8.7	58.4	22.6	A	9.5	21.4	3.1		8.7	50.6	30.3		9.0	14.4	45.6		9.8	15.3	9.1	
9.0	21 4.7	53.5	A	9.2	22.0	34.2		7.8	55.7	17.9	B	9.2	20.5	34.6	A	9.6	17.1	4.9	
10	10.3	9.2		9.5	51.2	36.2		9.1	41 2.6	52.7		9.0	23.9	44.2		10	24.7	29.9	
9.3	37.3	58.1		7.5	33 4.1	57.2	A	9.5	15.1	12.9		8.9	42.4	26.9	A	9.5	35.2	16.3	
10	22 4.2	8.3		9.0	9.6	15.2		9.6	28.1	54.2		8.9	42.9	26.0	A	9.1	42.6	52.4	
9.5	14.5	21.2	A	9.8	18.2	31.4		10	40.4	43.5		9.6	52 18.2	9.7		7.3	43.2	2.0	Sj
9.2	50.5	21.1	A	9.8	22.3	32.9		10	42 18.4	22.6		10	27.2	34.8		9.7	56.5	8.4	
9.5	23 2.4	23.4		9.5	24.4	47.4		9.4	35.5	30.0		9.9	28.8	42.9		9.5	4 9.6	54.1	
9.8	13.1	44.4		9.4	36.5	7.0		8.9	36.9	0.4	M	9.3	50.5	46.8		9.6	17.5	34.5	
10	35.2	41.8		8.7	40.0	8.1	A	9.8	51.4	57.9		9.0	53 2.4	22.6	A	9.8	19.0	31.0	
9.4	35.4	39.8		9.5	42.0	52.5		9.1	43 8.6	30.3		10	12.2	11.9		9.8	35.9	17.7	
9.4	39.4	29.4	A	9.2	46.2	28.7		9.2	13.5	24.9		8.0	15.5	48.7	B	9.2	39.8	34.4	
9.5	52.2	3.9		8.4	34 19.5	7.9	A	9.5	13.9	11.1		8.8	30.1	4.5	A	7.0	50.9	45.5	B
9.3	24 1.1	26.1	A	10	23.0	33.5		9.5	18.4	44.7		10	55.4	20.8		10	5 0.8	13.0	

1022: 19ʰ23 9′39″9 B_2, Ep. 1872.15

1301—1360				1361—1420				1421—1480				1481—1540				1541—1600			
	6h	—15°			6h	—15°			6h	—15°			6h	—15°			6h	—15°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.2	5 4.5	47.4	A	7.3	15 35.4	35.8	A	9.6	25 59.8	32.1		7.7	36 23.9	35.9	B	9.4	44 37.2	14.5	
9.8	6.1	3.4		9.7	16 6.6	32.8		9.4	26 8.1	34.3	A	9.1	32.0	48.6		9.4	54.8	37.1	A
9.5	7.1	50.6		9.6	8.9	14.4	A	8.0	9.6	43.7	A	8.5	36.6	22.1		9.0	45 4.9	39.8	A
9.0	13.8	31.4	A	9.1	35.2	3.5	A	10	26.7	44.5		8.0	40.5	41.6	B	9.6	12.8	31.3	
9.5	14.6	12.1		9.3	36.5	48.5		9.8	34.6	44.5		9.8	45.0	50.7		9.0	35.0	6.3	A
9.8	16.9	46.0		8.5	48.6	50.0		9.7	40.7	10.4		9.8	51.1	6.5		8.6	38.4	2.3	A
8.7	19.6	36.7	A	9.8	17 4.7	9.1		8.8	51.4	26.9	A	10	37 8.4	35.9		9.6	55.7	35.0	
9.0	6 27.8	11.2	M	9.2	11.8	37.3		9.4	27 4.0	33.8		10	10.8	31.1		9.3	46 5.7	25.9	
9.0	31.2	55.1		9.8	29.3	54.5		9.4	15.4	8.7		7.8	10.8	54.1	A	9.4	21.0	44.4	
9.8	34.6	4.7		10	32.7	44.8		9.5	16.4	39.1		9.8	21.1	55.9		9.3	42.2	17.9	A
8.8	35.4	27.4	B	9.8	39.0	58.0		9.0	37.1	27.7	A	10	44.2	16.0		9.5	47 12.7	26.4	
9.1	37.1	22.9	A	9.4	18 6.3	55.4		7.7	49.8	54.0	B	10	56.9	27.0		9.6	13.8	17.5	
9.2	50.9	6.5	Sj	9.0	8.8	34.1		8.7	28 1.9	54.8	B	9.3	38 7.0	6.9		9.2	21.7	52.8	
7.5	52.0	21.0	A	9.9	9.5	42.1		10	2.8	38.9		9.6	13.3	17.8		9.6	32.4	37.5	
8.7	7 7.6	24.9	A	10	11.2	48.6		9.3	9.4	20.8	A	9.3	21.7	8.0		9.5	39.3	36.8	
9.4	18.2	51.1		9.8	31.1	2.2		9.8	16.6	43.1		9.8	23.6	12.7		9.1	40.5	25.1	A
9.5	8 8.0	24.5		8.6	33.2	3.7	A	8.8	17.9	55.0	B	10	32.9	14.6		9.8	58.4	3.4	
9.2	28.9	45.2		9.8	39.9	28.3		9.0	22.2	13.1	Sj	9.7	34.7	1.0		9.3	48 10.2	16.3	
10	31.3	50.5		9.6	51.6	32.6		9.9	26.4	54.3		9.8	36.0	55.4		9.8	30.4	3.8	
8.8	54.4	45.5		10	19 15.0	37.6		9.5	43.0	25.0		9.2	39 5.8	35.7		7.7	39.1	31.4	A
9.1	9 2.5	33.3		9.0	36.1	2.3	Sj	9.3	45.7	8.8	A	9.2	17.5	52.7		9.8	41.6	12.1	
9.1	16.7	19.2	Sj	8.7	38.1	32.9	A	9.5	50.6	48.2		9.0	24.1	47.6		9.5	49 5.6	29.2	
9.8	17.6	31.0		9.6	40.2	27.4		9.2	55.8	53.5		9.8	31.9	58.7		9.5	17.3	56.2	
9.3	26.1	47.5		9.5	44.3	30.3		9.0	29 1.4	8.8	A	8.6	34.0	26.5	M	9.0	24.1	34.0	
9.1	28.9	20.9	M	8.8	20 4.8	26.1	A	9.2	1.7	11.3	A	9.5	45.7	39.5		9.0	25.0	57.1	A
9.5	54.6	37.9		9.1	34.7	50.4		8.2	3.0	53.8	B	9.6	55.9	25.4		9.8	31.4	40.5	
9.2	56.5	14.4	M	8.8	38.3	2.6	A	9.4	11.2	32.6		9.0	40 4.8	56.7		8.9	34.2	15.1	
8.5	10 16.7	4.8	A	8.1	48.8	14.0	A	8.0	19.9	59.3	B	9.2	23.7	14.4		9.4	52.7	0.0	
9.7	18.6	24.8		9.2	55.6	40.3		9.8	38.6	5.4	A	9.8	28.4	4.7		9.3	57.3	0.4	
9.8	24.9	24.7		7.7	21 4.1	13.1	A	9.2	41.8	53.5		9.8	41.6	7.1		9.0	50 14.6	11.6	K
9.5	32.0	50.0		9.6	4.7	6.4		10	42.6	7.5		7.5	43.3	54.7	M	9.8	25.0	47.2	
9.8	36.0	44.7		9.0	6.6	41.9		10	52.5	5.9		9.5	51.1	28.5		9.8	25.9	49.5	
9.8	57.3	36.0		10	20.6	41.4		9.5	54.7	41.1		9.1	56.0	43.7		8.3	37.3	33.4	
9.4	11 3.1	32.3		9.8	29.7	47.0		8.7	30 38.4	22.8	A	9.5	57.7	29.4		9.8	40.3	23.2	
8.6	4.6	24.3		9.8	45.0	22.9		9.2	51.9	38.9		9.8	41 17.0	30.0		9.5	44.5	42.5	
9.8	15.3	58.8		9.0	51.9	16.9	A	9.1	31 4.3	16.5	Sj	9.4	20.9	13.6		9.4	51 0.3	31.7	
9.0	46.6	45.4		9.5	22 20.5	37.7		9.8	6.8	54.3		9.8	31.2	51.7		9.4	1.5	42.5	
9.1	57.9	19.4		9.5	23.8	26.4		9.1	8.4	58.4		9.7	48.4	28.9		10	31.0	32.1	
10	12 11.8	51.5		9.0	29.2	46.2	A	8.6	16.2	49.1		8.3	48.8	10.1	M	9.4	32.2	34.3	
9.8	17.0	20.0		9.2	56.7	8.3		10	28.1	34.6		10	42 4.9	25.0		9.7	32.7	42.8	
9.4	23.2	3.0		9.6	23 1.5	26.0		9.1	47.3	34.7	A	9.1	16.3	16.8	M	7.5	52.7	51.6	B
9.0	27.0	20.7	Sj	9.1	2.1	1.0		10	32 3.5	1.8		9.5	36.7	13.3	M	9.6	52 3.9	3.8	
9.8	52.5	24.0		9.1	19.2	5.3	K	8.5	23.7	50.5	A	8.8	47.3	44.8	A	9.1	10.4	5.2	
9.9	53.9	59.9		9.3	21.2	59.8		8.7	51.9	59.9	A	9.4	43 5.3	21.6		9.5	11.9	47.7	
9.6	13 11.5	49.2		9.4	21.6	11.3		10	33 9.1	43.1		9.3	11.1	48.4		9.5	30.3	2.5	
8.9	16.0	0.7	K	9.0	27.0	57.8		9.4	42.5	44.0		10	13.1	47.3		9.6	34.6	25.3	
9.3	20.6	29.8	A	8.2	29.1	37.6	A	8.5	52.0	43.5	A	9.8	16.2	54.5		9.3	41.4	4.6	
10	34.7	50.4		9.4	47.2	40.4	A	9.8	56.7	49.7		9.6	20.0	41.8		9.8	45.2	57.2	
9.8	38.0	21.0		9.7	51.2	38.2	A	8.5	58.0	52.4	A	10	23.9	42.4		8.8	53.5	47.4	
9.3	38.4	57.2		8.8	52.6	0.3	B	9.5	34 10.5	41.3		10	27.3	43.9		9.8	58.2	32.9	
10	44.8	15.2		9.4	24 14.5	39.0		10	13.6	28.7		9.8	29.2	17.6		9.1	53 8.1	19.1	
9.2	14 4.4	32.7	A	9.6	22.5	8.6		10	14.2	22.3		9.4	44.8	52.0		9.3	12.1	51.0	
8.5	13.7	50.8		9.8	41.5	39.7		9.1	20.5	1.0		8.1	52.9	52.0	A	8.8	17.3	24.0	
10	18.2	47.2		9.8	25 4.5	31.4		9.5	22.4	37.2	A	9.2	57.1	47.5	A	8.9	17.6	2.8	B
9.9	38.1	1.8		9.2	8.6	32.7	A	9.6	28.5	41.2		9.8	44 4.4	31.4		9.8	35.8	53.9	
9.0	42.0	34.1	A	8.2	26.4	22.8	A	9.6	31.5	28.7		9.8	13.2	16.5		9.7	44.9	27.6	
9.1	50.3	11.6		9.4	43.5	49.6		9.8	43.8	13.3		9.3	15.3	22.5		8.0	48.9	3.4	B
8.7	15 3.8	0.2	Sj	9.8	53.1	16.5		7.5	35 28.4	52.2	A	9.4	17.8	24.1		9.9	59.6	29.9	
9.5	4.7	31.5		10	54.4	0.8		7.3	32.6	4.5		9.8	26.6	44.3		7.2	54 4.0	11.9	B
9.3	15.6	2.4	A	9.8	54.4	27.5		9.8	44.2	11.9		9.8	27.4	49.7		9.8	9.7	33.7	

1601—1660				1661—1720				1721—1780				1781—1840				1841—1900			
	6h—7h	—15°			7h	—15°			7h	—15°			7h	—15°			7h	—15°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.6	54 13.7	55.7		9.6	1 41.4	57.0		9.1	8 18.9	53.6		10	15 11.9	52.0		9.4	21 32.1	57.8	
8.3	15.4	7.3	A	9.0	44.3	27.1		9.6	19.2	47.0		9.5	15.8	58.3		9.6	36.5	34.5	
10	21.7	53.3		9.0	59.1	52.8		9.3	29.0	0.9		9.1	37.4	25.8		9.2	45.6	41.5	A
9.6	29.1	58.7		8.3	2 14.4	42.5		9.5	33.3	6.1		9.5	42.7	25.8		9.4	52.5	15.7	
9.5	36.8	22.6		9.5	37.8	50.2		10	40.6	47.0		9.8	46.1	12.9		9.8	22 3.2	4.2	
9.3	41.0	28.6		9.0	38.5	55.6	A	10	44.7	56.1		8.3	48.8	17.3		10	8.7	24.7	
9.6	55.9	41.8		9.8	40.0	50.8		9.4	46.5	44.3		9.2	49.5	53.5		9.4	13.3	4.3	
8.2	55 17.5	11.4	A	9.5	47.7	32.6		9.8	54.5	46.0		9.4	55.4	9.7	K	9.6	17.2	44.3	
9.8	38.1	31.4		9.1	49.5	27.7		9.5	9 0.0	15.5	A	9.8	57.4	50.3		9.4	20.2	45.0	
9.3	43.8	3.3	A	9.6	3 0.1	2.4		9.8	6.6	32.0		10	16 9.0	52.1		10	28.2	8.0	
9.5	45.3	26.4		7.2	0.3	0.6	B	9.8	13.3	14.2		9.4	13.4	50.3		8.7	39.3	51.1	A
9.3	45.9	7.1	A	9.1	5.4	51.6		6.8	24.0	58.7		9.8	20.9	29.6		10	42.8	8.7	
9.5	58.6	54.1		9.8	10.0	51.0		9.5	37.6	57.2		9.6	30.0	33.5		8.7	50.6	46.0	A
9.5	56 18.2	52.4		9.5	10.5	27.3		6.0	40.4	19.8	A	9.3	40.3	45.9		9.7	51.4	37.1	
9.2	29.3	30.6		9.3	17.7	21.6		10	47.7	33.4		10	49.7	16.2		9.5	58.7	6.1	
9.4	32.1	58.3		7.0	20.6	59.9	A	9.2	10 2.1	43.0		10	54.1	16.2		8.4	23 1.3	58.7	A
8.0	33.6	48.0		9.0	23.8	56.0	A	9.8	7.8	16.3		9.5	54.1	5.1		9.3	7.8	6.3	
8.8	33.8	58.5		9.2	27.2	21.4		9.5	13.9	49.7		8.9	56.7	26.4		9.1	16.1	26.5	
9.1	36.0	34.6		10	28.2	58.3		9.7	28.9	18.0		7.9	17 15.4	35.4	B	9.4	16.6	17.4	
9.1	44.3	3.1	K	9.5	28.8	39.9		9.8	33.6	18.0		9.8	17.5	55.2		9.8	18.7	52.2	
10	51.5	38.1		7.7	34.2	27.1		10	50.0	52.7		9.5	26.5	12.6		9.8	23.4	32.7	
10	52.6	31.8		9.1	40.4	22.7		9.6	11 6.7	22.4		9.0	27.3	53.9		8.9	31.2	30.2	A
9.8	57 4.6	13.5		9.7	48.9	34.0		neb	10	23.5		9.1	31.4	49.6		9.2	33.0	34.1	
9.8	9.2	35.8		8.8	4 0.1	54.3	A	9.6	18.3	0.4		9.7	36.9	4.8		9.5	42.0	29.2	
4.3	11.2	25.4	L	10	10.6	34.3		9.5	24.0	55.3		9.0	50.3	47.1		8.4	43.8	33.1	A
8.9	13.3	4.8	Sj	9.2	33.8	54.5	A	9.0	27.7	8.8	A	9.5	53.1	11.7		9.6	52.1	29.6	
10	14.1	5.5		9.8	44.8	29.2		9.8	27.9	31.0		9.7	56.6	29.6		9.5	58.2	34.1	
9.5	35.8	39.2		10	47.4	31.6		8.7	35.2	22.0	A	9.7	57.2	21.7		8.2	24 4.5	41.5	B
8.5	36.9	6.6	A	9.0	55.1	53.6	A	9.6	47.0	11.0		9.5	18 1.8	36.9		9.0	12.6	8.0	
10	42.5	17.4		8.2	5 16.4	8.1	B	9.8	47.9	16.0		5.8	6.7	55.0	B	9.8	23.1	45.0	
9.8	58 7.0	45.5		9.8	17.1	51.5		9.6	59.7	43.1		9.1	19.3	43.6	A	9.0	24.7	49.0	A
9.8	17.2	56.5		10	29.7	43.7		10	12 8.3	31.6		9.7	22.9	0.1		9.8	31.3	24.1	
10	21.0	48.6		9.5	31.0	46.1		8.9	10.8	12.1	A	9.8	32.5	4.1		9.1	33.2	0.4	A
9.8	22.3	7.0		8.9	40.5	27.0		9.6	14.8	38.2		9.3	34.7	30.8		10	38.5	13.8	
9.1	23.4	21.0		8.2	6 10.8	15.4	B	9.8	19.9	6.5		9.0	35.4	40.2	A	8.1	41.1	0.4	A
8.8	24.5	10.7	A	9.8	12.3	5.9		9.8	19.9	4.6		9.5	54.6	19.8		10	41.2	57.5	
8.7	34.5	39.3	A	9.8	12.6	34.7		9.8	29.0	22.5		9.5	19 9.8	3.9		10	51.8	7.6	
9.6	34.7	18.7		9.0	14.0	58.2	A	8.9	31.1	40.2		9.2	23.7	22.9		10	25 2.2	7.9	
9.6	48.4	29.1		8.7	19.1	54.3	A	9.8	31.2	46.3		10	24.7	44.1		9.1	4.1	3.0	
9.0	57.5	20.2		9.6	28.3	12.5		9.5	32.7	18.1		7.2	28.6	22.6	B	10	6.8	0.7	
10	59 2.0	20.9		9.6	37.5	6.3		9.2	32.8	1.7		9.8	44.5	15.0		10	7.9	8.0	
9.1	9.3	25.2		9.9	39.8	17.3		9.5	47.5	15.9		9.3	51.2	29.1		9.2	19.7	6.2	
9.0	28.8	50.3		9.1	44.0	3.0		9.5	50.3	23.5		9.0	20 4.2	38.3	A	9.8	28.5	15.2	
9.5	34.1	52.7		9.1	51.1	15.5	A	10	50.4	48.5		9.2	5.1	18.6		8.5	31.3	46.3	A
9.8	39.0	12.5		9.7	52.4	27.3		9.8	51.3	43.8		8.3	13.9	36.5	A	9.2	35.0	38.3	A
9.3	42.0	38.7		9.3	54.0	33.7	A	8.0	13 0.1	37.2	A	9.0	23.0	52.2	B	9.6	41.1	47.0	
9.7	56.3	20.9		9.2	7 0.5	15.7	A	9.5	6.5	36.6	A	9.7	32.7	58.9		9.6	43.0	47.7	
9.8	57.8	23.4		9.7	9.0	15.5		9.0	11.6	15.3	A	10	34.1	46.7		8.7	54.4	9.2	A
9.9	0 1.5	50.5		8.7	22.4	22.2	A	9.8	17.4	8.4		9.8	36.3	16.8		9.8	26 2.7	1.5	
9.8	10.4	26.6		9.6	27.5	14.0		9.8	20.5	53.1		9.3	36.8	47.5		10	21.9	9.0	
9.1	29.3	0.5	Sj	9.3	36.9	50.0		9.3	52.9	4.5		10	38.7	26.5		10	30.3	5.8	
9.3	30.2	58.4		9.4	44.3	8.8		9.5	56.8	4.4		9.1	54.0	13.0		8.0	37.2	8.5	A
9.4	50.0	10.3		9.0	46.2	50.2		9.7	58.8	29.6		9.4	54.5	26.9	A	9.5	37.2	12.3	A
8.7	1 2.1	2.5	B	8.8	49.1	16.4	A	9.1	14 9.5	52.2	A	9.4	56.7	57.6		9.5	37.5	17.0	
9.1	4.9	11.4		9.2	50.8	4.1		9.8	30.4	37.5		9.3	21 8.8	25.9		9.0	43.4	45.0	A
10	12.5	11.8		9.8	53.5	43.5		9.8	36.9	6.3		9.5	15.2	49.6		10	48.4	31.9	
7.5	18.8	28.6	B	9.8	56.4	37.5		9.3	43.5	53.0		8.9	16.8	48.1	A	10	56.0	55.2	
9.2	23.4	7.1		9.0	58.2	14.0	A	9.0	15 4.3	11.8		9.5	17.6	45.8		9.7	57.6	59.2	
9.0	30.8	39.0		9.3	59.4	40.4		9.4	6.0	52.0		9.0	19.2	5.7	A	9.0	27 2.9	25.3	
9.8	32.7	55.2		7.5	8 13.1	13.7	A	9.0	8.6	14.2		9.6	26.2	50.8		9.8	10.0	42.5	

1901—1960				1961—2020				2021—2080				2081—2140				2141—2200			
	7h	−15°			7h	−15°			7h	−15°			7h	−15°			7h	−15°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	27 24.4	58.9		8.0	32 44.8	59.3	A	9.3	38 47.1	47.3	A	9.8	43 50.5	45.0		9.8	49 36.4	25.3	
9.2	29.3	28.3		9.2	46.0	34.6	A	9.5	50.8	51.8		9.0	55.6	40.3		9.7	36.5	29.3	
9.3	35.3	44.5		9.4	47.7	9.1		8.6	55.3	5.7	B	9.8	56.1	49.2		7.2	52.8	8.2	A
7.0	39.7	52.7	B	9.8	57.5	56.0		9.4	39 2.3	29.5		9.5	44 4.1	21.0		8.9	50 2.4	43.7	A
9.6	28 0.3	9.2		8.2	33 0.0	41.9	A	9.5	8.9	25.9		9.3	27.1	49.0		9.8	13.0	14.6	
9.8	10.8	33.8		7.5	7.1	30.0	B	9.8	11.1	45.5		8.6	28.1	54.6		9.7	14.9	46.4	
9.1	12.0	19.9	A	9.2	22.6	7.8		9.7	13.6	59.9		9.5	35.8	47.9		9.4	22.2	29.9	
9.1	12.5	22.0		9.6	37.0	48.2		9.0	22.6	30.5	A	9.8	41.6	33.5		8.7	31.2	38.9	A
9.6	24.2	55.6		9.4	40.0	32.0	A	9.8	27.6	4.9		9.7	46.5	58.8		9.8	46.1	16.3	
10	30.2	3.3		9.7	50.7	7.8		10	29.7	26.7		8.2	48.0	30.6		9.4	54.1	5.9	
9.8	34.8	51.3		10	34 1.9	22.7		9.3	37.6	24.0	A	9.0	49.1	46.2		9.1	51 0.4	54.2	A
9.5	40.6	18.7		9.5	6.3	49.7		9.4	39.0	35.5		9.0	49.1	4.2	A	9.1	1.5	55.2	
9.2	44.4	11.2		9.4	9.9	49.1		9.5	42.1	27.2		8.9	51.4	52.4		9.2	2.5	42.7	A
7.2	46.3	3.9	A	9.3	27.8	31.5	A	9.4	43.7	39.7	A	9.5	58.8	50.9		10	8.8	22.9	
8.6	50.1	17.6	A	9.4	33.5	57.1		9.4	46.8	10.6	A	9.5	45 4.5	26.3		9.5	9.7	28.5	
9.5	53.8	54.0		9.3	33.9	23.8		9.8	49.2	20.5		9.8	11.4	17.2		9.8	29.6	50.7	
10	29 3.2	35.4		9.8	45.1	39.0		9.6	40 3.0	59.7		9.8	27.3	48.1		9.0	46.2	21.4	A
9.7	8.4	54.0		9.0	53.6	32.2	A	9.8	11.5	58.5		9.5	33.4	35.0		9.4	47.3	39.7	
9.7	10.4	49.7		9.3	53.8	12.2		10	22.3	37.7		10	34.4	39.0		9.3	49.8	3.9	
9.4	12.7	10.8		9.8	58.5	50.8		10	28.5	42.1		9.4	46.3	16.8		10	55.3	18.3	
9.5	15.9	40.5		8.8	35 2.2	57.7	A	9.5	29.2	0.2		8.8	50.8	4.3	A	7.5	52 4.0	15.8	Sj
9.8	18.6	3.0		10	16.2	29.8		9.8	34.0	5.6		7.8	59.2	3.3	A	9.2	7.3	43.8	
9.4	28.1	4.0		9.8	21.2	8.9		8.3	34.0	17.7	B	9.8	46 3.9	18.4		10	15.6	9.3	
10	33.4	21.2		9.4	33.4	0.6		9.7	44.1	27.7		9.6	8.3	14.0		10	15.9	56.9	
10	40.8	12.3		9.8	38.5	11.0		9.3	44.8	58.5		8.6	14.8	6.0	A	9.3	17.7	45.5	
8.3	47.2	57.4		8.5	42.4	27.0	A	9.4	50.8	48.5		9.6	20.4	15.2		9.2	20.6	50.4	A
9.7	48.3	32.1		7.0	44.0	43.8	A	9.7	52.7	35.5		9.5	23.2	46.0		9.8	26.7	7.9	
9.2	52.2	46.0		10	45.2	2.4		9.6	53.3	16.8	A	9.0	35.1	4.4		9.6	34.8	5.8	
9.5	30 3.3	45.1		8.8	48.6	59.8	A	6.2	41 2.0	37.8	B	9.3	37.8	19.2		9.4	35.9	52.7	
9.0	7.7	42.0		9.1	49.6	27.1	A	9.0	2.4	0.2	A	8.2	42.4	29.4		9.0	46.5	46.5	A
9.1	11.4	36.4		9.1	51.7	56.6	A	9.3	4.0	43.1		10	48.0	7.4		9.7	53.4	34.6	
9.1	17.2	7.5	A	8.4	56.4	36.7	A	6.7	8.7	39.5	B	9.4	59.7	17.2		9.7	53.7	23.3	
9.8	23.8	44.0		9.9	36 3.9	27.6		10	34.4	48.4		10	59.8	33.7		9.1	57.4	17.2	
9.4	27.1	0.0		9.8	4.6	20.6		8.7	41.3	12.2	Sj	9.0	47 8.3	47.1		9.7	57.7	38.7	
9.8	30.1	55.6		9.7	22.3	12.9		10	42.2	43.4		9.6	17.9	55.0		9.7	58.4	39.4	
9.4	32.5	7.8		9.8	34.9	0.4		8.2	43.4	30.7	B	9.5	21.5	11.1		9.7	53 14.1	30.0	
9.4	33.5	8.7		9.4	40.3	5.5		9.8	52.0	30.7		9.6	26.2	48.2		9.4	19.1	0.3	
9.4	47.0	12.6		9.6	40.7	20.9		9.7	54.4	26.5		9.8	32.2	43.8		9.4	24.4	6.6	
9.0	49.8	43.7		9.7	47.9	21.8		8.9	55.7	12.5	A	9.2	35.0	16.2	A	9.8	33.5	12.9	
8.6	52.7	45.1		9.5	56.8	43.5		9.2	55.9	58.7		9.0	37.4	25.6	A	9.1	34.2	47.4	A
8.0	56.5	21.5	A	9.6	59.1	31.8		9.6	42 2.3	28.9		9.6	39.5	59.4		9.5	41.4	32.3	
9.3	57.7	16.9	A	9.5	37 8.3	34.8		9.0	2.8	54.5		9.4	41.7	53.7		9.7	43.2	25.1	
10	31 2.2	7.5		10	11.8	52.7		9.7	13.1	54.1		9.8	48 15.8	15.0		9.6	43.5	15.8	
10	14.2	8.5		9.1	15.9	55.2	A	10	17.4	59.1		9.8	16.1	35.0		10	47.6	9.0	
9.2	15.3	13.0	A	9.5	19.5	23.1		9.9	20.3	49.2		9.4	21.5	37.3		9.7	54.3	22.2	
9.5	19.7	30.7		7.7	20.7	49.8	B	9.4	27.2	58.2		9.7	22.1	21.5		9.4	58.1	0.9	
10	27.3	51.6		9.3	31.9	57.3	A	9.9	29.3	44.4		9.0	33.6	13.5		9.7	54 4.4	39.7	
9.4	29.7	35.8		9.1	35.7	53.6	A	8.5	36.4	58.6		8.5	47.4	32.9	A	9.8	8.9	56.3	
9.7	30.9	20.7		9.9	42.5	48.0		9.1	39.7	38.4		9.2	49.1	57.6		9.2	10.3	56.8	
7.2	34.3	43.0	A	8.5	58.7	37.5	A	9.8	53.0	53.7		8.7	51.7	27.8	A	7.3	15.4	20.6	A
9.5	35.2	7.8	B	9.1	38 0.7	25.8		9.5	54.6	35.0		9.5	55.9	28.8		10	21.7	21.8	
9.8	43.0	13.6		9.6	5.0	12.3		9.4	43 0.4	13.4		8.9	56.8	1.9		9.2	31.0	35.1	
9.8	44.4	43.8		9.8	6.2	34.3		9.7	6.4	17.8		7.1	58.2	11.6	Sj	9.6	38.6	53.5	
9.9	45.7	34.5		8.1	17.1	46.5	A	9.5	16.3	22.6		9.1	49 6.9	16.3		9.7	45.5	7.2	
9.8	32 22.2	19.4		8.7	19.9	21.3	L	8.7	23.2	2.8	B	9.8	25.3	9.4		9.7	50.9	8.5	
9.5	25.4	56.9		9.8	23.3	19.5		9.8	33.7	39.0		9.5	25.8	20.8		9.6	56.8	43.9	
9.8	35.8	11.3		8.8	23.9	57.2		10	34.9	10.8		8.5	27.2	30.5	A	9.5	55 2.2	22.8	
8.8	30.5	13.7	A	9.4	27.1	12.8		9.1	39.6	29.4		9.5	31.2	48.4		9.7	7.0	56.6	
9.3	38.6	20.9		9.5	45.0	37.0		8.7	40.4	21.9	A	9.2	31.4	33.2		9.8	10.1	13.7	
9.4	41.0	56.7		9.1	46.9	37.9	A	9.2	50.2	10.1	B	9.2	35.1	37.4	A	10	11.6	49.1	

2201—2260				2261—2320				2321—2380				2381—2440				2441—2500			
7h—8h		—15°		8h		—15°		8h		—15°		8h		—15°		8h		—15°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
1.0	55	14.4	11.9	Sj	7.8	0	15.9	23.3	B	9.7	6	26.0	32.5		9.3	13	27.7	39.5		7.4	20	22.7	10.5	Sj
0.5		14.4	51.6		9.1		25.1	53.8	A	9.3		27.5	11.1		9.0		33.8	7.6		9.3		37.3	52.9	
0.3		29.6	1.5		9.8		52.2	8.9		9.4		35.4	37.8	A	8.5		42.9	49.2		9.1		43.4	48.5	A
0.4		33.3	52.0		9.7		53.9	48.8		5.4		39.9	21.3	A	9.3		49.2	6.3		9.5		47.5	10.2	
0.5		35.4	11.9		9.7	1	8.1	20.1		9.8		45.0	40.2		9.7		53.5	28.0		8.6		54.6	29.1	A
0.4		44.1	10.7		9.8		12.6	5.5		9.1		49.6	59.9		9.8		58.4	56.0		8.3		57.7	49.0	A
0.4		49.8	12.3		9.8		18.9	26.9		9.0		49.6	9.4		9.6	14	13.4	41.5		10	21	12.5	0.3	
0.7		51.1	55.6		9.4		24.3	42.6		9.8		50.0	53.7		8.0		13.4	3.5	A	9.7		14.5	2.9	
0.5		52.1	23.3		9.2		29.8	49.9	B	9.8	7	22.6	5.9		9.2		27.4	8.3		9.8		36.9	28.9	
0.4		53.2	44.0		9.8		34.1	55.4		10		24.3	35.5		8.9		30.5	28.1		9.8		38.6	23.5	
8.7		58.1	2.4	A	8.3	2	5.1	16.2	K	10		26.4	29.9		9.8		36.3	12.8		9.3	22	1.1	29.1	
9.7	56	1.4	17.0		9.3		10.3	40.3		9.1		33.3	13.4		9.4		49.2	43.0		7.6		7.7	35.5	B
9.1		6.9	28.6		8.8		11.4	53.4	A	8.7		33.6	36.1	A	9.7		49.7	53.8		9.5		11.1	20.2	B
9.7		12.7	16.6		8.5		16.7	33.4		8.3		42.2	44.7	A	9.4		52.3	18.3		8.7		12.8	23.1	B
9.4		19.9	15.9		9.4		22.8	16.2		9.5		43.8	6.9		9.8	15	1.3	17.6		8.5		19.6	2.9	K
9.8		26.5	10.7		10		29.5	42.9		8.9		46.2	5.8	M	9.5		3.1	59.9		8.5		25.8	17.5	B
9.5		29.4	25.2		10		30.4	40.2		9.0		49.1	20.2		8.4		17.0	24.3	M	9.7		28.0	56.0	
9.5		30.8	56.3		7.3		36.3	8.9	A	9.4		53.5	23.2		9.5		17.8	30.0		8.9		54.4	31.1	
9.6		33.1	11.7		9.9		43.9	29.4		9.4	8	1.7	6.7		9.2		36.1	9.2		9.4	23	2.1	13.8	
9.4		33.2	26.3		5.6		49.1	49.4	A	9.4		3.5	57.4		9.5		40.5	32.6		9.7		9.6	2.8	
9.5		35.5	4.2		9.8		55.2	31.8		10		14.5	20.8		9.4		54.0	4.1		9.5		14.0	50.4	
8.8		37.2	53.6	M	9.8		59.1	51.3		9.5		20.6	2.0		9.8		56.5	10.8		9.3		14.8	17.9	
9.0		44.4	52.7		9.9	3	1.3	34.2		8.1		37.4	59.1	A	9.8		58.6	51.5		9.3		16.0	4.1	
9.5		45.6	40.7		8.9		4.5	36.0		8.9		47.3	41.9	A	9.7	16	2.6	59.8		10		35.5	35.9	
9.4		52.2	16.4		9.8		12.5	9.7		9.5		52.6	6.1		8.8		3.5	27.5		9.8		41.8	56.3	
9.4		59.7	54.8		9.5		13.7	16.2		9.7		55.5	9.9		8.4		12.0	40.4	M	9.7		48.1	22.3	
10	57	2.0	14.7		9.9		19.6	56.5		9.5		57.0	54.4	A	9.3		13.8	10.9		9.7		55.1	13.8	
10		4.0	38.8		8.7		23.4	16.6	A	10	9	1.7	42.3		9.9		15.9	5.9		9.8		56.6	52.7	
9.3		8.9	26.8		9.3		23.7	17.9	A	9.9		2.0	53.0		8.7		22.2	56.1		9.8		57.5	37.8	
8.5		11.3	28.2	A	10		27.7	1.5		9.8		28.0	0.7		9.6		36.5	45.8		9.0	24	0.6	29.9	
9.7		16.8	55.5		8.9		27.7	53.4	A	7.1		31.2	14.6	K	9.8		53.3	45.2		9.3		3.8	57.2	
8.1		19.5	56.0	A	8.9		33.7	47.4	A	9.9		36.6	22.2		9.9		59.6	1.0		6.8		10.8	21.1	B
7.8		21.9	16.1	A	10		45.3	45.9		9.8		37.1	37.2		9.8	17	4.3	14.7		8.8		15.6	8.4	
9.8		30.0	39.9		10		46.5	21.0		9.6		44.7	57.5		8.9		8.7	58.7		9.0		21.6	3.7	
9.8		33.9	58.5		9.9		47.4	27.8		9.7		46.8	10.3		9.7		17.0	6.9		8.7		23.4	31.0	A
9.1		34.5	15.0		9.8	4	10.3	34.0		7.7		50.0	52.6	A	9.2		18.3	43.4		8.8		24.1	23.7	A
9.0		51.9	22.8		9.0		18.2	29.5	A	8.7	10	13.3	47.5	A	8.0		19.5	19.9	Sj	8.8		38.3	1.4	
9.2		54.3	27.8		10		23.0	8.3		9.5		27.2	8.8		9.7		40.1	1.7		9.8		50.0	16.6	
9.7	58	1.5	19.6		9.2		34.1	50.7	A	10		28.8	38.9		8.0		50.9	5.6	M	9.5	25	0.2	40.3	
8.7		1.7	33.6	B	8.7		37.4	53.1	A	10		39.4	42.4		9.5	18	5.3	44.4		9.7		10.7	25.4	
8.2		23.0	30.7	A	9.7		47.4	30.8		9.8		41.5	37.8		8.6		8.4	48.7		9.9		25.0	13.2	
9.5		26.7	51.2		9.8		49.0	17.8		6.3		44.3	50.3	A	9.2		21.4	28.1		9.4		32.6	37.7	
8.3		36.9	12.5	A	9.8		55.6	46.4		9.5		54.4	14.8		9.4		32.5	28.3		9.3		47.1	38.0	
9.4		38.7	28.3		9.0		56.9	41.5	A	10		56.7	1.0		9.5		36.2	25.6		10	26	11.4	56.2	
9.8		40.8	51.8		9.1	5	6.1	18.9		8.5	11	6.0	20.8	A	9.7		36.5	41.1		8.2		12.5	35.8	A
9.4		48.6	2.5		9.2		7.9	15.2		9.5		11.9	14.4		9.2		58.0	45.0		9.4		18.2	37.5	
9.7		53.8	47.9		8.8		13.0	5.8	B	9.7		13.4	36.7		9.2	19	0.7	6.0		7.5		26.2	16.4	
9.5		58.6	35.1		9.5		13.2	31.6	B	8.6		27.2	27.1		9.6		11.7	53.0		8.3		28.4	43.8	A
9.3	59	1.1	51.2		8.6		24.6	13.4	A	9.0		29.7	38.3		9.5		13.8	54.7		9.1		29.7	46.9	A
9.0		8.0	57.2		8.6		26.5	13.7	A	8.8		36.5	2.2		9.4		25.4	47.1		9.4		30.7	42.5	
9.4		10.3	25.9		9.8		27.8	4.0		10	12	6.6	34.4		9.7		27.6	22.0		9.4		36.5	12.0	
9.2		13.8	53.0		9.8		31.3	40.0		9.2		17.4	38.2		8.7		33.0	35.5	A	9.3		44.6	45.3	A
7.8		16.9	59.4	A	9.5		38.3	21.4		9.5		28.9	50.3		10		39.1	14.1		9.8		49.8	0.2	
9.4		47.1	51.5		8.8		43.4	6.3		9.1		33.0	4.4		9.5		42.5	58.3		6.3		51.6	36.5	B
9.2		49.5	24.5		9.1		51.2	32.1	A	9.8		33.7	39.4		9.8		50.2	1.1		9.3		54.9	4.9	
9.4		49.8	53.5		9.2	6	2.4	12.7		9.3		37.7	11.2		8.5		59.1	25.2	A	9.3	27	7.2	44.5	
9.5		58.7	0.7		9.5		2.6	28.4		9.8		45.9	52.5		9.4	20	0.8	44.9		9.3		9.5	7.9	
8.8	0	4.0	31.2	A	9.5		9.6	42.0		8.0		57.7	3.5		8.6		5.8	6.6	K	9.8		11.9	19.8	
9.7		13.1	19.8		8.9		13.7	47.0	A	8.7	13	6.9	50.4		8.9		6.9	35.4		9.8		12.4	9.1	
9.2		14.1	39.5	A	9.7		25.2	41.2		10		7.6	32.5		9.2		15.1	0.9		9.4		16.1	36.2	

2501—2560				2561—2620				2621—2680				2681—2740				2741—2800			
	8h	−15°			8h	−15°			8h	−15°			8h—9h	−15°			9h	−15°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	27 21.5	55.7		9.0	36 8.5	53.6	A	9.1	46 34.1	56.6		9.4	56 58.6	33.4		9.5	8 21.0	28.5	
9.4	29.3	3.8	A	9.8	10.4	28.4		9.5	34.4	3.7		9.5	57 5.3	30.4		9.5	22.7	32.3	
9.8	55.3	6.6		9.4	22.0	16.9		9.5	52.7	12.6		9.5	10.3	33.0		9.1	23.1	23.1	
9.2	28 0.4	58.5		9.5	31.5	38.4		9.8	47 8.5	37.4		9.2	23.8	33.2		10	23.8	16.1	
9.3	0.5	37.0		9.0	41.9	5.7		9.5	11.3	12.0		8.6	34.1	20.7	M	9.5	48.7	9.5	
9.4	16.6	35.8		9.5	45.2	55.7		8.2	11.9	2.6	B	9.2	58 4.1	21.8		9.8	54.2	11.7	
9.4	27.6	20.4		9.4	57.6	35.9		9.0	13.6	34.1	A	9.2	10.7	54.4		9.5	9 1.4	48.4	
9.3	37.6	42.3		9.4	37 1.3	44.5	A	9.2	32.9	24.2		9.1	15.5	24.9		9.7	26.0	25.8	
9.3	38.8	6.4		8.0	7.0	26.1	A	9.1	55.4	33.9	A	9.3	23.9	5.0		9.1	39.2	36.6	A
8.7	56.7	29.7	A	9.3	17.5	27.4	A	9.3	48 1.8	48.1		9.8	24.9	34.5		9.5	40.8	20.2	
9.5	29 1.5	42.5		10	21.4	21.3		7.5	12.5	14.2	B	9.3	39.8	22.8		9.1	10 4.1	3.6	
9.4	19.5	21.8	A	10	25.3	9.5		9.4	14.2	40.0		9.4	58.6	42.7		8.5	31.8	43.4	B
9.8	20.0	5.5		9.8	57.3	57.1		10	18.5	58.4		9.8	59 0.2	57.0		9.4	32.9	54.5	
9.3	27.1	38.0		9.0	38 12.2	29.9	A	9.7	20.8	18.4		9.5	1.7	58.5		9.3	48.8	39.2	
9.2	35.2	47.9		9.4	16.9	36.9		8.5	35.4	36.0	A	9.4	2.6	42.0		9.8	49.2	18.1	
9.4	50.3	33.7		9.8	23.1	10.2		9.3	46.2	8.6		9.9	12.1	18.0		9.4	11 8.7	12.8	
9.1	55.7	1.2		9.0	25.5	26.6	A	9.7	56.5	4.1		10	12.7	9.7		10	33.2	13.3	
9.4	30 4.5	18.7		9.0	25.6	31.8	A	9.6	57.9	8.6		8.7	34.3	32.6	M	9.9	12 5.5	20.5	
9.7	25.4	11.0		9.1	29.5	52.0		10	49 2.4	26.0		9.3	39.2	30.5		9.7	6.8	6.6	
7.5	26.5	31.3	A	9.5	30.3	27.5		10	18.3	0.8		10	49.7	12.4		10	8.8	47.0	
10	31.0	37.3		10	39 1.4	37.5		9.0	31.1	12.6		9.6	56.2	35.5		9.5	16.9	59.2	
9.1	31.5	51.6		9.2	17.9	32.7	A	8.5	33.5	36.4	A	10	0 25.0	52.7		9.1	26.6	10.5	K
9.8	38.8	9.3		9.2	24.0	46.2	A	10	38.5	44.1		8.8	26.4	5.0	K	6.0	41.7	13.6	B
9.1	49.3	34.2		9.5	24.4	2.6		9.5	44.2	35.0	A	9.8	34.9	7.8		9.4	50.8	35.6	
9.0	31 8.3	28.2	A	9.2	30.2	3.0		10	52.4	48.0		10	35.4	44.0		10	13 8.5	4.0	
8.2	9.5	2.5	K	9.5	31.5	15.5		10	50 6.5	3.0		9.5	1 1.1	28.3		9.0	49.3	37.7	
9.8	17.2	51.3		9.2	40 3.8	1.9		9.8	31.3	22.5		10	5.5	14.5		9.4	54.2	19.4	
9.4	19.3	31.8		9.5	5.2	16.4		9.8	41.9	40.3		10	5.8	0.2		9.2	14 15.6	18.2	
9.5	23.1	34.1		10	21.4	27.6		9.4	46.6	2.7	A	9.4	10.0	14.3		8.3	19.2	37.5	
9.4	23.8	4.2		9.5	32.6	55.0		9.6	50.6	7.4		8.7	24.7	54.8	A	9.7	22.8	28.2	
9.4	38.4	35.2	A	8.5	40.9	16.2	K	9.4	51 11.3	23.8		10	37.0	16.7		9.4	41.8	30.8	
9.3	44.1	50.0		10	56.6	22.5		9.4	14.9	32.5		6.8	57.4	41.1	A	9.7	43.8	24.9	
9.2	49.0	35.7	A	9.1	41 8.3	30.2		9.8	15.1	29.5		9.6	2 20.8	28.8		9.5	15 22.2	44.2	
9.2	32 7.3	31.4	A	10	22.6	31.0		8.8	32.0	57.3		8.9	34.2	0.6	A	9.0	16 2.3	56.0	
9.0	18.2	52.6	A	10	38.2	47.7		9.8	43.2	17.2		9.3	43.1	50.8		10	23.2	22.6	
9.6	23.7	53.4		9.5	59.9	30.7		6.0	55.6	35.2	A	10	50.0	22.5		9.3	24.8	39.6	
9.5	24.0	4.2		7.2	42 29.3	1.8	B	9.8	52 1.8	1.6		9.5	55.9	15.0		9.7	32.2	41.7	
7.8	28.0	31.4	A	9.5	33.5	40.2		7.0	9.3	25.7	A	9.8	56.6	54.1		8.2	41.5	11.0	K
9.5	28.2	20.5		9.0	36.9	14.8		7.7	28.4	56.5	B	9.3	3 7.3	12.4		9.1	17 3.7	20.0	
9.6	28.6	21.6		8.3	50.9	30.2	B	9.5	37.8	6.6		10	11.2	19.8		8.9	26.1	24.2	
9.1	54.7	0.1		9.5	54.4	13.2		9.5	53 2.6	15.4		9.7	11.9	27.4		9.4	26.2	46.2	
9.4	33 6.2	53.0		10	43 11.3	7.4		9.4	9.3	12.1		9.2	18.5	41.3		8.8	27.4	44.3	B
9.4	9.5	17.0		10	22.0	34.4		9.5	13.7	58.9		9.9	36.1	56.5		9.8	31.6	47.9	
9.3	27.1	23.9		9.0	39.7	31.6		8.6	33.6	13.1		10	43.9	18.2		9.8	50.3	57.4	
9.8	58.2	34.8		9.3	43.6	15.7		7.9	47.7	35.5	A	9.1	51.5	53.1	A	10	55.2	43.7	
9.1	34 4.7	49.2	A	9.0	47.8	15.9		9.4	54 0.6	51.7		10	54.5	44.6		9.3	57.7	50.5	
9.0	5.9	32.7		8.1	44 3.6	30.9	B	8.8	10.5	47.0	B	9.5	4 35.8	8.1		7.8	18 0.4	1.2	B
9.6	6.8	20.7		9.3	51.8	17.1		8.9	17.1	35.2	B	9.0	5 14.4	33.0	A	8.3	22.6	45.8	B
9.2	13.0	49.4		9.0	56.6	22.3		9.8	26.3	37.0		9.0	52.3	6.3	A	9.8	26.5	10.4	
9.8	13.3	39.2		9.7	57.5	13.6		9.4	29.9	25.5		10	56.8	57.5		9.1	31.1	17.9	K
9.0	22.9	41.8	A	9.4	57.6	33.1		9.2	41.6	15.4		9.1	6 12.7	5.9	A	8.5	39.4	28.1	A
10	23.7	29.5		9.7	45 21.9	18.9		9.5	55 5.7	19.9		10	29.6	29.7		9.1	19 35.6	23.1	A
9.8	40.8	2.7		10	22.4	5.8		9.6	9.3	35.9		10	37.6	5.1		9.7	42.1	33.5	
5.4	59.6	25.2	A	9.4	32.6	59.2		9.0	36.2	44.4		10	43.0	54.7		9.0	45.9	48.7	
9.7	59.6	11.6		9.5	44.5	12.2		9.3	44.6	22.0		9.4	43.3	13.5		9.3	47.8	34.0	
9.4	35 1.9	39.6		7.8	49.8	12.7	B	9.5	50.0	6.9		10	48.4	33.0		7.7	51.4	49.3	
8.9	34.6	31.4	A	9.2	54.1	2.7		9.7	54.2	28.7		9.0	7 6.2	9.2	A	9.2	20 2.5	39.3	
8.4	55.9	28.0	A	10	46 18.9	21.9		9.0	55.9	5.1		10	11.0	57.1		8.5	8.1	52.4	
9.0	36 1.7	13.1		10	23.8	10.0		9.5	56 20.9	3.8		10	24.3	16.1		7.2	9.0	23.1	A
9.7	4.9	1.4		10	26.8	15.4		10	35.3	33.3		10	8 0.9	57.7		9.7	12.4	48.2	

2801—2860				2861—2920				2921—2980				2981—3040				3041—3100			
	9h	—15°			9h	—15°			9h—10h	—15°			10h	—15°			10h	—15°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.0	20 15.1	52.5		9.0	32 40.2	41.8	A	8.5	45 46.4	42.2	A	9.5	0 21.8	2.8		9.6	15 22.5	18.1	
10	21.9	22.5		10	33 6.4	17.3		10	53.4	44.0		9.5	24.6	20.5		9.0	42.4	19.9	
9.0	28.0	7.9	A	10	13.6	14.6		8.5	54.5	14.1	A	9.0	27.1	43.7	A	8.7	16 1.1	26.6	M
9.3	43.6	16.0	A	9.1	20.3	14.8	A	9.1	46 22.3	16.8	A	9.1	27.5	9.4		8.9	21.4	30.7	M
9.8	21 22.7	15.6		9.4	23.2	54.2		8.6	28.4	3.9	B	9.1	39.5	58.8		9.7	59.2	31.4	
9.5	24.1	43.0		9.8	24.1	29.7		9.8	47 12.3	32.2		9.3	48.6	28.3		9.0	17 5.3	36.7	
8.9	24.8	53.0		8.3	24.6	41.8	A	9.3	26.5	21.6	M	9.8	55.5	11.2		9.8	6.1	22.3	
9.6	36.9	12.0		9.5	34 2.9	48.3		9.1	33.5	20.5	M	9.8	1 51.9	11.2		9.8	14.5	0.7	
8.0	44.0	53.6	A	9.9	20.6	59.6		7.2	48 4.5	30.7	A	9.5	2 4.3	37.9		10	43.8	42.2	
9.0	45.5	43.1		9.9	22.6	45.0		10	44.8	54.4		9.5	9.4	44.8		9.7	52.9	49.4	
9.0	22 1.3	33.7		9.4	35 12.8	21.9		9.7	51.9	25.2		9.5	13.0	18.2		9.0	57.1	50.2	
8.5	6.4	11.3	B	9.4	14.7	54.0		9.0	49 10.7	47.0	M	10	44.3	11.1		9.5	18 2.8	45.1	
9.3	14.0	50.7		8.2	23.5	15.7	A	9.4	11.8	40.1		9.4	58.8	48.5		9.1	14.4	46.1	
9.8	23.0	38.6		8.7	23.8	20.1	A	9.4	19.4	20.3		9.7	3 10.0	25.8		9.0	35.9	9.7	A
9.8	36.3	24.7		8.7	34.7	12.1	A	9.3	26.6	12.8		10	34.1	53.3		8.3	56.9	54.0	B
9.2	36.6	33.5		9.3	36.9	21.4		9.2	38.3	11.5	K	9.8	4 4.4	57.5		9.4	19 16.4	12.6	
9.1	23 13.2	1.2		9.4	51.2	21.4		9.2	56.8	13.1	A	10	14.8	1.0		10	18.9	23.7	
10	29.7	38.7		10	56.8	35.9		8.0	50 1.3	12.4	A	9.7	29.1	34.9		10	19.8	38.8	
9.1	54.4	18.4		8.0	36 24.6	40.3	A	9.0	14.3	11.5	A	9.1	57.9	19.8		9.1	29.2	4.1	A
9.7	24 1.5	46.5		9.8	26.3	18.5		9.8	14.8	25.5		8.0	5 14.1	28.1	B	8.3	39.3	37.8	M
8.4	5.5	6.2	B	9.1	29.2	58.4		9.8	29.2	49.1		8.0	17.2	22.3	A	9.5	20 22.9	57.7	
9.8	47.0	34.1		10	35.6	6.8		7.0	43.1	49.7	B	9.8	28.4	23.7		7.8	46.8	10.5	A
9.8	25 6.8	54.2		10	54.8	21.9		9.7	51 4.4	19.4		8.6	29.3	10.2		8.0	21 10.9	32.9	A
9.0	6.9	19.9		10	37 0.5	7.0		9.2	8.0	15.5	A	10	38.5	34.5		9.5	14.9	20.2	
10	43.5	13.9		9.0	6.8	49.1	A	9.7	25.8	14.2		9.4	49.8	22.8		8.7	28.6	25.1	A
9.2	44.4	37.5	M	9.3	7.1	50.7		10	26.2	46.2		9.4	49.8	9.8		9.1	53.3	24.7	A
10	54.9	48.2		9.3	37.6	39.5		9.4	28.3	12.8	M	9.0	53.1	3.3	B	9.1	22 6.1	2.1	K
9.2	56.0	58.4		9.5	38.8	58.0		10	31.7	46.5		10	6 45.3	2.1		9.6	8.6	32.1	
9.4	26 21.9	1.2		10	51.1	56.7		7.7	52 11.3	19.0	A	9.5	45.7	51.5		8.0	23 9.7	56.3	M
9.8	33.0	12.2		9.0	56.9	32.3	B	9.8	20.1	3.4		9.1	7 13.2	52.5		9.5	34.8	32.0	
9.5	58.3	43.0		9.1	38 2.3	38.8	M	9.1	43.5	33.2	M	10	34.1	25.5		9.6	24 10.3	2.6	
9.8	27 7.5	25.3		9.1	2.6	53.1	A	8.5	52.3	35.7	A	9.8	8 9.6	46.2		9.0	31.1	39.5	
8.8	10.4	2.7	M	9.4	21.1	37.6		10	53 10.2	10.4		9.1	11.8	12.4		9.9	37.8	24.2	
10	19.1	23.4		9.5	23.6	43.0		8.0	19.9	48.4	B	10	29.1	4.7		9.5	43.2	7.2	
9.4	25.0	12.7		10	28.7	23.0		8.7	25.7	36.0	A	9.7	35.2	47.5		9.5	25 7.3	20.4	
9.4	38.8	14.5		9.5	42.3	42.8		9.5	28.8	22.2		9.8	46.1	39.5		9.4	34.9	31.1	
7.8	45.3	44.1	B	9.5	39 7.6	57.2		10	33.1	11.0		9.7	9 5.2	33.6		8.6	59.1	4.3	A
9.0	28 12.6	21.8	A	8.5	23.5	47.3		9.1	55.7	13.4	M	7.3	15.9	25.1	B	9.2	26 44.0	6.3	A
9.1	27.4	38.1	A	9.8	33.3	32.9		9.5	54 24.6	48.2		10	36.1	6.2		10	27 6.6	26.1	
9.0	38.9	49.7		7.8	56.1	52.9	M	9.2	32.6	46.7		9.0	37.7	8.7	M	9.0	44.1	11.4	A
8.8	43.6	26.2	A	9.0	41 9.0	4.0	M	10	44.0	3.9		9.9	39.4	30.9		9.7	28 7.8	25.5	
9.4	50.5	39.0		8.6	14.7	21.6		9.9	56.1	29.3		9.5	10 1.0	35.7	A	9.0	14.9	30.0	A
9.3	29 47.9	57.3		9.6	22.9	6.2		9.3	55 13.6	25.2		9.8	18.3	19.0		9.4	28.0	6.1	
7.8	30 48.8	3.2	B	10	41.5	35.6		9.1	17.9	51.4		10	41.2	25.1		9.8	28.3	42.2	
9.5	54.7	29.0		9.0	44.0	39.4		9.9	20.6	7.3		9.8	57.6	7.5		9.5	29 5.0	4.4	
8.8	57.2	37.5		9.0	44.0	25.6	M	8.3	31.2	18.9	A	9.3	12 22.7	21.3		9.8	11.1	12.1	
8.7	31 4.2	35.1		8.5	52.9	46.3	A	9.0	39.6	52.5		9.6	31.5	30.8		6.3	12.3	35.8	A
10	8.5	19.9		9.2	53.1	13.5		9.2	56 23.5	40.2		9.3	54.4	30.0		8.7	15.2	27.1	A
9.8	18.1	25.2		10	42 22.5	29.6		9.7	54.0	1.2		8.5	13 26.1	59.3		9.8	47.2	32.9	
9.0	29.3	7.2	B	8.0	42.0	58.1	A	9.1	57 15.4	35.0		8.0	34.9	37.7	M	9.2	30 0.4	50.0	A
9.5	39.3	37.3		10	46.4	28.7		9.4	34.6	50.5		9.0	37.5	59.6		9.5	2.1	12.8	
9.4	49.3	53.0		9.4	52.4	47.8		10	58 55.7	33.0		9.8	48.9	29.7		9.8	25.3	55.1	
9.8	57.2	39.5		9.8	55.5	58.1		10	56.0	10.5		9.6	59.2	21.9		9.0	26.0	6.8	
9.5	58.5	35.7		10	43 32.4	1.4		9.8	56.7	46.8		9.4	14 26.5	28.6		10	49.0	17.5	
10	32 8.3	3.8		9.5	47.1	33.3		9.8	59 10.0	14.6		8.9	33.3	55.2		9.8	31 26.8	4.5	
9.6	13.7	40.5		7.7	44 4.0	12.1	B	9.3	30.0	27.0		10	39.2	46.8		8.8	47.2	11.7	
10	24.4	24.2		9.7	10.4	15.2		9.5	30.9	45.7		9.8	39.6	57.5		10	47.4	33.6	
9.4	30.1	23.7		8.2	30.4	52.8	B	9.1	33.0	47.5	A	10	53.1	21.4		9.4	59.2	47.5	
9.4	30.2	16.6		9.8	41.3	34.8		8.0	34.5	38.3	A	9.4	58.0	52.1		8.9	32 24.8	59.1	A
8.2	36.9	18.5	B	6.5	45 3.3	51.4	B	10	0 6.7	8.5		9.7	15 9.9	37.0		10	33.3	52.9	

3101—3160					3161—3220					3221—3280					3281—3340					3341—3400				
	10h		−15°			10h—11h		−15°			11h		−15°			11h		−15°			11h		−15°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.7	32	53.7	34.2	B	9.4	48	6.2	27.8		9.4	4	46.8	11.7		10	22	56.7	10.6		8.8	36	3.1	52.6	
9.6		57.5	16.2		8.2		38.8	35.7	B	9.3	5	38.3	57.7		9.3		58.6	31.1		9.5		21.6	7.7	
8.2	33	3.1	37.0	B	9.6		46.8	31.5		8.6	6	21.6	10.4	A	9.1		59.4	38.8		8.5		27.6	57.3	B
9.4		12.8	0.8		9.1	50	4.4	50.1		10	7	47.9	20.4		9.8	23	12.5	4.9		9.8		34.9	28.9	
9.7		39.1	32.4		9.5		4.7	5.3		9.5		50.2	48.1		9.4	24	8.6	33.0		9.4		36.1	37.4	
8.6		45.3	1.2	M	9.9		6.6	57.3		9.3	8	26.1	33.5	M	9.1		15.8	25.1		9.7	37	5.7	25.6	
9.4		55.2	1.9		9.1		18.1	4.1		8.1		26.1	33.8	A	10		20.0	53.0		8.7		7.6	48.4	A
9.5	34	7.1	49.4		9.8		32.1	56.2		9.3		35.7	28.0		9.6		57.8	30.8		9.6		52.4	29.3	
9.8		26.2	51.6		9.8	51	19.9	51.5		9.7	9	31.6	39.6		10	25	3.4	1.8		7.7	38	16.2	16.7	A
9.2		43.6	45.4		9.4		23.0	39.6		9.8		45.2	50.6		9.3		21.1	48.9		9.8		47.6	21.4	
8.3	35	1.9	20.0	B	9.8		39.9	37.9		9.0		56.6	30.3	A	8.4		25.3	49.6	B	10		57.5	6.9	
10		35.4	18.9		9.8		57.1	34.6		9.8		57.4	58.8		10		34.1	17.5		9.3	39	16.5	43.2	
10		39.1	19.4		9.5	52	4.7	12.7		9.5		59.6	14.0		9.1		36.2	55.1		9.4		20.6	17.4	
8.9	36	11.6	56.0		6.5		21.1	34.5	A	10	10	21.2	57.7		9.8		49.0	8.9		9.4	40	34.9	38.8	
9.0		14.5	24.9		9.5		57.5	28.1		9.4		26.0	26.6		6.2		55.8	28.7	B	9.3		43.4	47.3	
8.7		25.0	53.8	B	9.8	53	6.7	21.5		8.5		45.9	2.0		9.1	26	21.5	31.8		7.3		47.9	44.6	B
10		35.9	21.3		9.5		31.9	45.1		10		53.6	40.3		6.8		45.5	14.7	B	9.1	41	13.9	48.8	
10		49.8	21.7		7.0		46.2	0.3	B	8.6	11	7.1	45.4		8.5		48.2	36.2	L	7.5		30.4	47.8	B
9.9		55.0	54.0		9.0	54	55.8	41.8		9.4		19.9	23.1		9.4	27	3.1	33.6		10		44.4	9.1	
8.8	37	26.9	38.0		9.5	55	1.4	44.0		9.6		24.5	8.7		9.8		18.5	44.9		9.3	42	8.9	47.9	
9.1	38	13.8	25.4	A	8.8		5.0	9.2	B	8.2		58.3	27.5		9.8		22.9	56.0		10		23.0	12.6	
9.1		49.6	35.4	A	9.3		6.1	48.5		8.4	12	30.3	26.5		9.0		33.4	10.0	A	9.4		39.9	34.8	
8.2		54.0	58.1	B	8.7		9.9	59.0	B	9.8		52.3	44.5		8.5	28	3.2	18.2	A	6.2		57.2	3.5	B
9.1	39	25.6	2.5		9.4		15.3	45.5		9.8		56.7	24.2		10		33.2	28.7		9.4	43	12.3	8.1	
9.1		27.2	49.6		9.3		43.0	6.6		10	13	2.4	9.5		9.5		58.7	2.9		9.7		38.1	56.5	
9.8		34.1	39.4		9.3	56	19.3	24.0	A	9.8		5.8	2.8		10	29	3.0	36.5		9.3		57.7	12.3	
10		48.8	5.2		8.6		21.5	7.0	B	10		18.1	21.1		10		10.2	31.9		9.5	44	3.5	47.5	
9.3		48.9	7.4		9.5		41.9	6.0		9.7		22.8	5.5		9.4		15.9	43.7		9.1		6.1	18.5	K
9.8	40	5.8	38.8		8.3	57	33.7	28.5	A	9.7		55.2	4.8		10		43.2	20.6		9.0		22.5	36.2	
8.8		15.2	19.7		9.1	58	13.8	4.0	A	9.8	14	40.7	1.2		9.7		49.9	15.8		10		41.8	42.0	
10		16.1	11.9		9.0		18.3	56.5		10		58.4	57.2		9.5	30	14.7	2.7		9.8		45.3	48.9	
9.8		21.9	34.8		8.8		37.5	29.7	A	10	15	7.0	46.2		9.5		24.7	4.9		9.5		56.6	21.0	
9.4		47.5	3.9		9.1		51.6	15.9	A	10		11.9	40.0		9.4		29.7	33.6		9.5	45	32.7	27.6	
9.1	41	37.0	6.1		8.9		58.0	12.1	A	8.7		16.6	34.9	A	9.6		36.0	22.3		8.6		40.9	29.3	A
9.3		46.4	58.8		9.3	59	7.8	43.6		7.7		27.5	22.2	A	8.9		58.4	26.2		7.7	46	0.0	47.1	A
9.8	42	12.3	44.2		7.7		13.7	44.9	B	8.0		50.2	48.6	A	10	31	0.9	21.9		7.5		10.0	18.4	A
9.7		19.9	52.7		8.8		26.5	2.9	A	10	16	16.8	7.7		8.5		13.8	57.9		9.2		55.5	13.4	A
3		28.2	26.2	L	10		31.6	3.9		10		48.5	41.0		8.3		20.8	24.2		9.3	47	10.2	39.0	
10		46.5	4.1		9.2		47.9	42.6		9.5		55.2	7.3		9.5		33.5	40.0		10		19.2	21.2	
8.9	43	41.3	51.3	A	10	0	8.6	20.3		9.3		57.4	53.0		8.0		46.1	48.7	B	9.6		45.8	52.2	
9.7		46.8	45.1		9.2		10.9	27.0	A	9.5	17	27.3	17.6		10		51.5	20.4		9.0		54.0	15.6	A
9.3		53.1	44.8	A	9.8		30.0	45.8		10		35.4	53.2		8.8		57.6	0.9		9.1	48	11.0	8.4	A
9.2	44	20.3	51.9		8.7		39.4	15.0	A	9.1	18	12.4	22.4	A	6.3	32	30.7	49.0	A	9.8		39.7	9.6	
8.3		28.7	38.1	A	9.5		57.7	22.9		9.2		28.4	21.2	A	9.3		32.2	9.8		9.1		39.8	40.0	
8.9		30.8	4.2	K	10	1	1.0	57.1		9.4	19	10.2	48.0		9.8		42.1	3.5		8.8	49	51.2	38.9	
9.4		42.7	21.9		7.9		3.8	10.6	A	9.2		30.2	37.7		9.2	33	1.8	25.9		9.8		56.4	6.8	
9.5		48.2	21.7		9.8		46.4	25.9		9.9		59.3	15.8		9.7		2.7	51.3		8.7	50	13.7	28.7	A
9.4	45	10.3	49.3		9.6		58.9	54.7		9.3	20	22.1	7.9		9.8		28.7	43.0		9.1		21.4	15.8	A
9.9		25.6	11.2		9.4	2	40.5	21.8		9.4		30.7	30.8		9.7		29.8	27.7		9.9		24.6	15.8	
7.5		32.5	49.0	A	10		55.4	15.6		8.5		33.5	3.8	A	7.7		51.4	52.7	A	9.4		46.8	58.4	
8.9		46.0	17.8	K	9.8		59.8	41.7		10		50.1	2.7		9.3	34	17.3	13.3		9.5		47.0	4.3	
9.7		48.6	26.8		9.5	3	1.4	49.4		7.0		56.3	5.2	A	10		19.7	42.3		10	51	5.4	24.1	
8.5		50.4	36.8	A	9.3		1.6	17.5		9.0		57.6	49.1	A	10		48.8	17.4		9.8		19.8	1.3	
10	46	3.1	34.9		9.7		4.7	42.6		9.6	21	27.0	30.1		9.4		55.9	23.9		9.8		21.0	7.5	
8.6		21.7	3.2	K	9.4		13.7	13.0		7.5		35.7	47.8	A	9.5	35	14.2	40.6		10		28.3	16.4	
9.6		22.7	22.2		8.3		23.3	40.1	M	10		51.2	17.7		9.8		30.1	42.8		8.2	52	0.8	14.4	K
9.9		29.5	22.4		10	4	12.2	35.2		9.4	22	13.9	29.7		8.4		39.5	35.7	A	9.8		2.3	27.2	
10		32.6	30.5		10		16.7	10.7		9.3		15.1	57.6	A	10		48.6	7.6		9.5		36.9	3.7	
9.2	47	46.0	4.0		9.5		20.9	39.8		10		27.8	20.4		9.5		50.6	53.1		7.8		45.1	46.4	A
9.5		57.1	40.4		9.8		30.4	40.3		9.8		36.2	39.5		9.1		56.2	6.4	K	8.2		51.3	51.6	A

3401—3460

	11h—12h	—15°	
m	m s	′	
9.5	52 56.1	45.5	
8.9	53 16.3	3.0	WC
9.3	30.2	18.1	
9.6	46.5	39.2	
8.0	55 41.0	38.5	A
9.5	52.9	55.7	A
9.7	56 16.9	49.7	A
9.6	28.9	47.9	
8.8	57 15.3	54.1	A
9.6	31.8	40.4	
9.1	33.8	29.1	
9.1	36.7	35.2	
9.4	38.6	28.2	
9.5	58 4.2	13.3	
8.7	17.4	43.0	A
9.6	28.3	35.0	
9.4	59 0.6	14.0	
9.4	5.5	7.2	
9.1	0 30.6	11.3	
9.3	52.1	32.2	
9.4	1 15.9	16.2	
9.5	47.5	21.1	
9.5	2 18.9	48.5	
9.9	33.0	3.5	
8.3	36.0	42.1	
9.2	3 0.9	34.0	
9.0	3.2	49.2	
9.4	37.4	19.4	
7.3	56.7	58.8	A
9.7	57.1	27.6	
9.6	4 4.1	57.0	
9.2	5 29.3	26.3	
9.0	36.2	48.1	A
9.4	6 22.4	7.2	
8.0	23.5	9.9	A
8.3	59.8	16.8	A
9.1	7 44.3	7.9	A
9.6	54.3	11.2	
9.9	8 36.0	43.0	
9.2	55.0	7.5	A
9.4	9 33.3	1.6	
6.7	34.5	53.1	A
9.8	52.0	49.5	
9.0	10 9.9	52.3	A
9.7	30.6	55.5	
9.3	35.4	55.9	
9.8	51.1	47.5	
10	51.4	39.0	
8.8	55.7	0.3	
7.4	11 49.6	28.1	A
9.7	52.3	52.3	
8.0	13 24.9	0.3	A
9.4	29.0	20.6	
9.7	35.2	42.2	
9.9	14 23.0	40.5	
9.4	57.1	48.8	
9.7	15 10.4	35.2	
9.0	37.8	1.2	K
8.7	16 5.0	52.5	A
9.6	19.6	47.6	

3461—3520

	12h	—15°		
m	m s	′		
9.7	16 24.6	49.2		
9.2	49.5	8.3		
9.4	17 17.4	53.0		
9.2	40.5	11.3		
9.8	49.8	32.2		
9.5	18 17.8	30.6		
9.8	30.7	46.1		
9.5	19 26.3	35.2		
9.5	41.8	55.1		
10	20 8.7	22.7		
6.8	16.9	49.5	L	
9.4	17.4	30.8		
9.4	29.2	23.2		
9.5	36.4	51.2		
7.8	21 6.4	11.8	B	
8.3	32.9	35.3	B	
9.4	52.7	25.5		
9.4	56.3	21.1		
9.8	22 16.4	5.5		
9.3	19.6	59.8		
9.0	20.9	43.1	B	
3	21.4	42.1	L	
9.5	30.1	21.1		
9.1	35.3	50.7		
8.5	23 28.5	40.6	A	
9.2	59.0	2.2		
9.3	24 4.6	56.8		
9.4	34.7	51.7		
5.0	36.7	23.4	A	
9.5	37.8	8.9		
9.4	54.2	51.3		
9.7	58.6	54.2		
9.7	25 9.3	4.1		
9.4	14.9	38.3		
9.6	15.7	46.3		
9.4	17.3	52.6		
8.0	21.7	51.0	A	
7.8	27 4.4	33.1	B	
9.7	6.9	5.6		
9.2	19.9	59.7	A	
9.0	59.0	16.8		
8.9	28 5.2	44.4		
9.6	45.9	16.6		
8.5	59.7	35.0	P	
10	29 17.7	44.2		
8.8	22.2	57.4		
9.6	30 2.4	26.0		
9.8	47.5	11.2		
9.4	31 1.6	6.4		
9.5	38.2	1.7		
9.0	48.6	21.0		
9.4	32 43.0	12.1		
8.3	33 7.7	21.0	A	
9.3	16.8	32.7		
9.3	49.5	48.6		
9.6	34 7.1	50.7		
9.4	16.0	0.8		
9.1	35 43.1	43.2	A	
10	55.1	45.3		
9.8	36 0.7	29.9		

3521—3580

	12h	—15°	
m	m s	′	
9.4	36 2.0	57.3	A
10	38.7	36.6	
9.0	55.6	41.1	A
9.8	37 22.6	48.2	
7.8	26.6	14.8	B
10	34.8	37.2	
9.4	38 19.9	38.5	
9.1	39.1	56.4	A
9.4	43.4	4.1	
9.1	51.0	44.5	A
8.7	39 0.5	43.9	A
10	3.4	27.6	
9.9	25.7	53.7	
9.5	40 10.6	58.6	A
9.8	28.5	11.1	
9.8	32.6	39.6	
9.5	41 1.1	57.2	
9.5	17.5	10.8	
9.6	24.5	40.3	
9.0	36.7	24.2	
9.6	41.9	26.7	
9.6	42.9	16.0	
6.5	42 9.3	5.1	A
9.9	19.5	38.0	
9.4	43.1	12.4	A
10	58.8	22.9	
9.5	43 52.7	22.3	
9.3	45 3.2	21.4	
9.4	16.9	40.7	
9.5	30.0	12.5	
8.3	34.0	48.2	
10	46 40.0	4.5	
9.8	59.3	16.5	
9.7	47 6.4	29.4	
9.6	55.4	57.1	
9.2	48 44.3	59.8	
9.7	48.6	47.1	
8.7	59.8	56.4	B
9.3	49 7.5	2.2	
9.9	14.9	33.3	
9.5	50 3.8	38.0	
9.3	24.5	51.6	A
8.5	31.8	59.2	A
9.8	33.7	45.1	
9.5	51.2	5.7	
10	51 30.2	25.1	
9.5	37.3	59.1	
8.3	47.1	44.8	A
9.8	55.6	3.4	
9.7	52 8.4	18.3	
9.9	17.2	6.4	
9.3	21.1	27.4	A
8.8	24.6	9.9	A
9.1	27.6	26.6	A
9.7	38.2	58.7	
9.7	53.5	49.2	
9.2	53 15.9	0.5	A
8.7	37.9	0.9	A
9.3	57.5	12.5	A
8.5	54 5.3	47.9	B

3581—3640

	12h—13h	—15°	
m	m s	′	
10	54 6.0	10.5	
10	42.9	49.4	
9.3	50.4	25.3	A
9.2	55 4.4	14.5	A
9.8	5.8	25.5	
9.9	28.7	37.6	
9.4	33.2	16.2	
9.0	41.7	29.8	A
8.0	56 0.0	33.1	A
9.3	16.6	59.1	
9.5	41.4	52.5	
9.5	58.0	5.2	
9.4	57 44.3	4.8	
9.5	44.5	18.9	
9.3	47.5	12.1	
9.0	58 0.9	4.2	A
9.7	58.8	40.1	A
9.5	59 58.0	3.0	
9.3	0 25.6	53.9	A
9.0	59.1	23.8	
9.5	1 1.5	18.5	
9.6	3.8	12.5	
9.5	13.6	22.9	
10	18.8	51.8	
9.1	26.0	59.0	A
9.6	42.3	46.0	
9.5	56.9	5.6	
6.8	2 0.3	44.0	
8.5	53.1	13.5	B
10	59.7	49.8	
9.1	4 10.2	44.5	A
9.5	10.6	15.4	
5.7	20.8	24.9	A
9.5	21.9	14.1	
9.0	30.8	5.3	
10	47.9	58.6	
9.9	5 4.0	32.7	
9.4	25.7	28.0	
10	32.1	48.7	
9.7	35.3	13.8	
8.5	6 25.6	46.7	A
9.2	7 4.2	45.1	A
9.5	12.3	41.6	
9.8	15.3	14.9	
9.1	23.0	28.8	
10	44.1	44.5	
9.4	51.4	55.9	
8.6	8 5.8	30.4	A
10	31.8	54.1	B
9.4	32.5	16.6	
9.8	34.0	27.3	
9.8	46.6	44.0	
9.3	54.7	59.9	B
9.8	9 20.6	3.6	
9.8	23.3	35.4	
9.7	58.3	25.7	
9.5	10 15.6	11.5	
9.4	44.9	46.3	
9.8	49.2	3.8	
10	51.6	30.0	

3641—3700

	13h	—15°	
m	m s	′	
10	11 35.2	37.0	
9.5	52.5	47.7	
9.0	12 30.9	27.8	B
9.0	41.7	56.4	A
9.6	54.1	39.2	
9.3	56.4	12.7	
9.3	57.1	37.9	A
10	13 12.2	57.5	
9.8	25.9	17.0	
9.6	38.9	50.4	
9.3	40.0	10.3	
8.7	40.7	11.8	B
9.1	14 8.0	8.5	A
9.4	23.2	54.7	
9.4	28.8	24.2	A
8.3	15 23.4	10.0	A
9.8	54.1	34.3	
9.8	16 5.3	45.8	
9.8	17 13.4	42.0	
9.0	25.1	25.3	A
9.1	35.1	51.5	A
9.1	51.2	49.3	A
9.2	18 5.3	40.2	
8.5	34.6	55.0	A
9.1	39.4	4.9	
9.0	53.1	21.2	
10	19 22.4	43.1	
5.5	43.2	13.1	K
9.6	48.7	51.2	
10	20 3.0	36.9	
9.5	15.3	28.1	
9.4	20.5	11.1	
9.2	35.8	5.2	
9.3	21 12.3	6.3	
9.4	19.8	41.6	
9.3	54.1	48.9	A
9.9	58.3	40.5	
10	22 1.5	26.6	
9.8	12.9	28.4	
7.8	55.9	28.2	A
9.1	23 16.6	25.3	
8.1	18.9	36.1	A
9.4	50.7	13.7	A
9.5	24 10.5	17.9	A
9.8	14.1	13.9	
9.8	27.4	18.8	
9.9	28.1	45.2	
10	37.6	42.5	
9.3	39.0	49.1	
9.6	42.6	24.7	
9.2	48.2	52.0	
8.7	48.3	48.6	B
9.8	25 20.4	23.4	
8.5	26 23.2	38.2	A
8.7	53.8	34.4	A
8.9	54.4	59.6	
9.1	55.7	5.7	A
10	27 7.1	43.5	
9.5	15.3	11.8	
9.4	35.5	46.9	A

3701–3760					3761–3820					3821–3880					3881–3940					3941–4000				
	13h		−15°			13h–14h	−15°				14h	−15°				14h	−15°				14h	−15°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.4	27	49.6	35.3		9.1	45	54.5	13.6	M	9.3	4	19.1	48.8		9.8	22	28.3	13.4		8.7	36	13.1	6.4	A
9.8		57.4	47.1		8.4	46	0.6	4.3	A	9.4		24.8	28.8		8.8		49.1	44.1	A	9.6		59.6	34.2	
10	28	15.1	40.4		9.6		10.5	49.1		10		31.5	15.7		9.8		55.6	0.1		9.9	37	30.0	50.1	
9.3		37.7	57.8		9.0		12.0	51.9		8.9		39.0	11.4	A	9.5		56.3	21.3		9.5		50.1	49.2	
7.8	29	16.3	41.7	A	9.5		33.9	11.8		9.3		40.5	58.7		10	23	0.1	41.9		9.1	38	0.7	7.5	
10		31.1	2.5		9.8		54.7	29.0		8.5	5	3.1	22.0	A	10		20.6	59.8		10		11.4	56.1	
9.6		58.8	12.5		9.7	47	4.2	36.1		9.1		30.4	40.6	M	9.2		41.8	35.9	A	9.8		25.1	24.0	
9.0	30	13.6	58.2		9.1		13.6	48.9	A	9.9		35.2	42.0		9.5		41.9	2.8		9.5		42.5	13.8	
9.1		54.6	37.5	A	9.2		29.5	10.0		9.8		43.0	12.5		9.1		45.1	54.0		8.8		59.5	51.9	A
9.8		56.0	30.8		8.0		45.3	26.1	A	10	6	5.5	47.7		9.7		45.3	29.0		9.5	39	0.7	3.3	
9.3	31	48.0	8.2		8.5		53.3	20.7	A	9.0		17.6	48.5	A	9.4		57.8	20.9		10		35.0	15.3	
9.0		48.4	43.7	A	9.3	48	0.1	41.6		9.5		29.7	27.5		7.0		58.8	43.0	A	9.8		40.0	6.4	
9.0		53.1	55.4		9.5		30.9	49.6		9.2		47.0	18.6		8.7	24	50.5	40.8	A	10		46.1	2.2	
9.1	32	0.2	24.1		9.0		37.5	29.2	M	9.6		54.5	29.2		9.2		51.4	49.5	A	9.9		54.5	21.0	
6.5		10.4	42.4	A	9.8	49	0.2	58.3		9.8	7	29.4	13.8		9.8		53.3	31.1		9.6	40	8.5	21.0	
9.1		12.3	21.0		9.8		33.2	24.9		9.0		43.0	52.8	A	9.3	25	4.7	18.9		9.8		9.6	44.5	
9.3		26.4	10.3		8.3		52.4	11.3	B	7.7		54.9	24.6	A	8.9		35.5	44.9	A	9.3		28.5	45.5	
8.6	33	0.4	10.9	A	9.7	50	38.1	32.2		8.8	8	49.7	22.4	A	9.0		53.7	3.5	M	9.5		39.0	8.5	
9.7		44.9	26.2		9.4		48.0	2.0		8.5	9	3.5	45.8	A	10	26	12.4	17.7		9.3		48.0	7.4	
8.4		53.5	26.3	B	10		56.3	34.6		9.7		7.3	57.2		9.8		17.5	48.0		9.8		50.7	15.8	
10		53.8	48.0		8.3		56.9	12.2	A	9.1		10.1	4.2		9.5		38.3	20.4		10		55.8	15.7	
10		54.1	52.0		9.8	51	31.2	25.2		8.5		53.4	20.9	A	9.9	27	3.8	59.0		9.0	41	15.3	57.1	
8.8	34	14.3	11.4	B	9.8	52	0.6	26.3		10	11	3.6	38.8		9.3		9.9	49.0	A	9.0	42	0.5	30.0	
9.8	35	2.6	24.3		9.4		5.1	32.3		8.8		8.3	35.0		9.5		10.7	31.0		8.4		5.5	47.8	A
8.8		5.8	30.0		8.6		58.2	37.4	A	9.5		9.8	15.0		10		17.0	42.7		5.3		39.9	23.3	A
9.5		18.6	23.6		10	53	3.7	18.7		9.0		11.9	4.6	M	9.2	28	39.9	48.1	M	3		51.8	26.1	A
9.1		42.5	46.0		9.8		36.3	32.7		9.0		15.4	54.1	A	9.8	29	0.3	7.5		9.8	43	4.0	6.7	
8.6		59.7	14.9		9.6		48.0	43.2		9.6		25.5	32.5		10		16.0	39.2		9.5		20.4	8.7	
8.8	36	20.7	46.0		9.4	54	36.4	45.0		9.7		34.4	46.8		9.9		20.9	44.3		10		28.6	26.3	
10		22.9	27.0		10		40.9	7.6		10		34.7	5.2		10		32.9	44.6		9.6		38.7	35.1	
5.6		41.0	26.8	A	9.1		42.0	40.7		9.5		58.8	15.2		8.2		33.0	54.4	A	9.8		42.9	7.0	
9.0		41.6	41.7		9.0		43.6	11.2	K	9.8	12	4.6	11.5		10		43.8	15.4		9.3		52.0	38.7	
9.6	37	11.2	52.0		9.5	55	25.4	46.5		10		46.5	40.2		9.5	30	22.3	16.1		9.4		54.1	9.1	
8.5		23.7	11.6	A	10	56	13.0	40.5		9.4		50.8	20.5		8.7		24.2	55.0	A	9.5		57.6	12.0	
6.7		46.4	2.0	A	9.0		23.5	21.1		9.5	13	13.3	34.3		9.2		38.6	52.9	A	9.5	44	32.9	52.1	
9.8		53.8	44.9		9.4		41.2	34.2		9.8		15.2	56.0		9.8		48.0	37.4		8.2		35.4	47.9	A
10	38	4.2	42.9		9.5		44.7	57.2		10		20.5	39.7		9.8		56.9	42.6		9.9	45	5.4	13.0	
9.2		49.0	57.5		9.5		45.8	6.2		8.9		38.1	35.4	M	9.7	31	2.0	38.9		8.3		36.8	54.7	A
7.8	40	9.5	20.3	A	9.3		49.9	14.0		9.1	14	38.6	4.8	A	10		14.4	43.6		9.5		59.0	28.1	
9.8		33.1	17.9		9.8		52.7	11.3		10	15	30.5	15.5		8.2		37.7	57.7	A	9.6	46	12.2	58.4	
9.3	41	24.0	22.9		10		56.7	32.1		9.1		51.9	18.5	A	9.5		41.3	23.8		8.2		26.9	47.8	A
9.0		35.0	55.5	A	9.5		59.4	58.5		6.7	16	0.1	26.1	A	7.3	32	7.7	34.2	B	9.3		39.8	51.0	
9.6		48.9	55.1		9.8	57	14.3	55.6		9.5		33.9	28.2		9.8		30.2	51.1		8.7		41.1	56.0	A
9.3		51.9	37.5		8.0		16.5	19.7	K	9.1		38.2	50.6		7.3		31.0	34.9	B	9.9	47	24.3	25.3	
9.7	42	33.7	47.6		6.8		20.4	38.1	A	9.9		58.0	25.2		9.4		43.2	16.1		9.8		51.8	19.3	
9.7	43	8.7	27.0		10		30.8	44.6		9.7	17	33.4	36.1		9.9		45.6	30.3		8.0	48	0.6	3.9	B
10		19.4	39.1		9.8	58	0.1	18.1		10		37.3	45.1		8.9	33	3.2	14.5	M	9.2		1.7	48.9	A
9.5		21.6	11.0		9.5		33.4	31.2		9.6		50.5	7.2		9.8		35.1	20.1		9.0		40.4	2.8	B
10		47.8	43.4		7.5	59	20.9	29.5	A	8.0		58.3	38.3	A	9.8		40.1	16.6		8.2		54.8	43.1	A
9.8		56.8	39.9		9.5		49.2	5.3		9.7	18	17.8	39.9		8.5		44.6	58.4		8.2	49	2.1	55.7	A
9.7	44	27.4	54.2		9.8	0	8.1	33.0		9.5		56.4	7.4		10		45.1	18.5		9.2		9.3	20.6	
9.7		31.1	43.9		8.7		27.0	52.4	A	10	19	10.8	35.0		9.4		58.2	25.0		9.5		29.6	56.5	
9.8		37.5	4.3		9.8		49.8	50.5		9.9		11.0	0.6		9.8	34	4.7	50.1		8.7		34.2	49.4	A
9.5		40.0	26.3		9.5	1	40.3	31.2		9.1		23.1	53.0		9.3		13.2	16.0		9.8		37.5	29.1	
8.6		46.3	26.9	B	9.5		58.6	48.0		7.7		27.9	9.4	A	8.3		24.0	58.8	A	10		46.1	53.2	
7.8	45	23.7	16.3	A	9.2	2	15.1	13.0		9.4		56.3	47.0		9.3		25.3	35.1	M	9.0		50.3	23.1	
9.7		27.5	35.2		5.0		55.2	36.4	L	8.9	20	15.1	27.7	A	9.4		33.7	13.6		9.0	50	9.4	53.8	A
9.2		36.8	38.3		9.5	3	11.6	14.1		8.5		30.2	39.4	A	9.9	35	11.6	24.4		9.4		9.7	33.0	
9.6		40.1	5.5		9.9		13.8	40.0		9.8		37.7	43.5		10		32.7	2.6		9.8		27.5	26.2	
10		50.6	49.7		10		57.8	2.9		9.9		47.2	45.2		9.4		55.5	15.2		9.8		44.7	47.1	

4001—4060					4061—4120					4121—4180					4181—4240					4241—4				
	14h—15h		—15°			15h		—15°			15h		—15°			15h		—15°			15h—16h			
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	
9.0	50	45.6	52.0	A	9.3	6	45.0	39.7		9.3	21	3.0	23.1		9.6	37	42.7	57.9		9.5	56	51.4	
9.7	51	10.7	17.3		9.3	7	0.2	17.0		9.2		5.6	53.4		8.0	38	13.5	42.2	A	9.4	57	7.0	
10		31.7	3.3		9.8		7.4	2.8		9.7		15.2	2.5		9.6		37.2	11.5		8.5		55.0	
10		34.6	59.0		9.4		20.0	40.5		9.3		20.9	33.4		9.5		51.8	12.6		9.8	58	15.8	
8.8		45.7	12.4	A	9.5		47.3	8.0		9.3		29.6	2.3		9.3	39	4.7	38.9		9.4		39.0	
9.8	52	7.3	37.2		9.4	8	13.9	42.7		9.5		44.0	19.8		8.9		6.2	43.3		7.8		39.3	
9.1		15.0	57.7	A	9.1		22.4	3.1		10		51.5	14.0		9.6		7.8	14.3		9.2		46.0	
8.5	53	30.1	21.2	A	9.1		28.8	58.5	A	9.5		52.7	27.4		9.8		11.7	56.9		9.4	59	12.9	
9.5		38.6	26.1		9.3		39.9	11.5		9.6		55.0	57.2		9.2		45.8	20.2		9.2		18.7	
9.5	54	13.1	16.1		10		42.6	59.9		8.2	22	6.6	11.1	B	9.2		54.7	56.6		8.3		28.4	
9.2		49.1	26.1		8.3		56.3	2.1	A	9.5		13.1	6.8		8.9		58.9	25.7	M	8.8		36.8	
9.3		51.7	9.8		10	9	45.7	39.6		7.9		56.7	20.7	A	9.0	40	21.8	5.0	M	9.0	0	28.2	
9.3		56.0	0.7	B	9.5	10	12.8	50.4		9.1	23	10.4	16.2	A	9.0		25.3	18.2	M	9.1		34.0	
9.9		56.1	16.8		9.9		16.0	37.5		9.3		34.1	48.3		9.4		54.8	5.3		9.2		36.1	
9.5	55	27.1	45.0		9.3		23.2	5.5		9.3	24	18.5	45.5		9.3	41	8.1	38.5		9.0		45.3	
9.1		35.2	2.5		9.4		51.3	45.1		8.6		30.9	7.1	A	9.3		8.3	34.5		9.8		57.8	
9.0		39.6	46.5	B	9.7		53.6	50.0		9.7		52.9	59.7		9.0		46.2	31.6	M	9.9	1	31.5	
9.7	56	2.5	58.8		10		54.8	37.5		9.3	25	38.8	20.8		9.3	42	19.9	34.6		9.9		46.1	
10		34.1	3.0		9.4	11	2.3	35.8		9.3		45.2	10.6		9.4		31.5	47.3		9.8		46.2	
9.9		36.6	12.5		9.3		47.5	45.9		8.6	26	8.4	43.0	M	9.0		38.5	32.5	A	9.8	2	1.0	
9.0	57	22.0	15.6		10	12	18.2	9.0		9.0		9.9	53.4		9.8		43.3	22.7		9.5		37.7	
9.3		33.5	11.7		8.5		34.2	53.8	B	10		50.2	0.3		9.4		46.2	31.5		9.4	3	20.2	
9.3		48.7	32.3		6.0		55.2	1.3	A	8.5	27	46.3	29.3	A	9.0	43	35.2	28.8		9.4		46.4	
9.5	58	4.0	31.1		10		56.6	42.0		8.0	28	45.7	2.0	A	9.9		38.4	16.8		9.3	4	9.6	
9.1		29.6	46.7	A	8.5		56.8	26.4	A	9.8	29	19.9	37.3		9.6		57.5	29.5		9.3		14.2	
5.3		32.1	41.3	A	9.5	13	16.7	1.3		9.1		20.7	15.5	A	9.5	44	31.5	34.5		8.5		36.1	
9.1		38.5	34.8		9.6		32.0	48.1		9.2		36.2	14.4	A	9.3	45	6.7	18.1		9.5		57.3	
6.8		43.3	55.0	A	10		50.1	10.1		var		40.0	41.5		var		23.7	48.1		9.1	5	10.6	
9.3		53.0	31.2		8.5	14	31.8	32.2	B	9.5		47.7	18.0		8.8	46	0.6	13.8	A	8.6		11.3	
9.4		57.3	29.2		9.5		38.7	48.8		9.0	30	8.7	10.4	A	9.8		10.8	28.9		9.5		13.7	
9.8	59	3.5	11.9		10		38.8	32.7		9.6		38.9	27.3		9.1		47.0	55.7	A	9.0		34.6	
9.0		23.6	50.9	A	9.6		39.6	24.6		9.0		41.2	2.0	A	9.4		48.0	54.1		9.5	6	5.1	
9.8		28.4	13.3		9.3		41.5	21.3		9.5		50.8	28.5		9.5	47	4.7	0.0		9.3		7.2	
9.8	0	29.1	44.7		9.8	15	8.8	29.8		9.4		58.3	38.9		9.1		16.6	8.9		9.1		13.1	
9.4		30.2	7.6		9.5		22.3	48.8		10	31	43.7	36.5		9.2		47.1	52.5		9.3		16.6	
9.8	1	9.0	8.2		9.0		27.5	39.9		10	32	5.8	23.6		9.5		56.5	37.4		9.5		34.8	
10		43.0	59.1		10		38.0	56.5		9.3		8.1	8.3		8.2	48	31.6	24.6	A	9.3		35.5	
8.3		49.2	9.3	A	8.8	16	10.6	34.9	A	9.3		19.0	0.7		9.3		36.1	4.3		9.1		56.9	
9.3		58.6	37.0		9.4		34.2	45.0		9.0		39.6	31.2	WC	9.5		41.4	34.9		9.0	7	19.8	
9.3	2	13.5	42.0		9.8		48.3	27.4		9.5		45.5	47.3		9.3		51.6	3.3		9.3		22.1	
9.2		15.5	47.5	A	9.3	17	8.5	33.1		8.8	33	31.9	5.2	A	6.8		52.3	35.9	B	9.5		29.7	
9.0		16.0	42.2	A	10		13.8	26.1		9.5		36.7	52.8		9.3		55.4	58.7		9.1		31.3	
9.4		34.2	30.4		9.1		38.4	12.5		8.8		53.8	5.9	A	9.5		59.6	14.1		7.8		35.2	
8.8	3	2.5	43.6	A	10	18	27.5	44.5		9.0	34	3.3	55.1		9.5	49	10.1	22.1		7.8		39.7	
10		15.0	40.5		9.0		40.6	55.8		7.3		37.0	32.5	A	9.0		39.1	22.7		9.1	8	25.8	
9.8		20.8	29.3		9.3		49.0	59.8		10		41.4	32.1		8.3	50	5.1	3.4	M	9.5		33.1	
6.5		43.8	36.6	A	8.4		58.9	15.8	B	9.6		55.1	24.4		9.8		48.1	4.3		9.1		40.3	
7.2	4	13.5	51.7	A	9.4	19	3.5	40.4		9.3		56.3	51.2		8.0	51	0.5	48.1	A	9.4		43.6	
9.7		19.0	34.7		9.4		12.1	47.5		9.5	35	3.8	19.9		9.0	52	2.9	44.6	M	9.5		48.7	
7.8		21.4	9.8	A	10		19.4	27.2		9.4		30.2	20.6		8.5		33.6	0.3	A	9.5		59.0	
9.6	5	14.0	42.5		9.8		20.8	0.4		5.8		55.4	12.4	A	9.5		50.0	17.3		9.1	9	13.2	
9.2		15.9	5.0		8.2		28.1	58.6	B	9.4		58.3	39.6		8.9	53	9.1	12.1	M	9.8		31.1	
9.7		16.7	57.9		9.5		30.2	27.6		8.5	36	0.4	26.0	A	9.5		47.3	46.2		9.1		44.2	
10		39.8	5.0		9.8		51.0	14.1		9.1		18.5	56.6	WC	9.4		59.3	26.2		9.6	10	28.5	
9.5		42.8	22.4		9.5		56.5	3.2		9.2		34.3	9.7		10	54	5.6	17.1		9.4		43.7	
9.4		55.7	21.0		9.6	20	7.6	55.7		9.1		55.3	19.3	A	9.1		25.6	3.9	M	9.3		46.3	
9.3	6	12.3	12.5		9.5		10.4	14.2		9.5		57.3	12.0		9.5		42.4	35.9		9.4	11	4.4	
9.5		17.2	30.2		6.9		31.4	11.4	B	9.5	37	6.6	5.5		9.6		50.9	56.7		9.4		7.6	
8.5		21.8	28.0	A	9.2		37.9	6.8		9.4		30.6	9.4		9.4	55	18.0	20.1		9.1		11.0	
8.8		26.9	52.6		9.5		57.6	43.1		9.7		34.0	1.9		7.8		18.9	59.4	A	8.5		11.2	

4040: 12ˢ.98 42′3″.8 B_3, Ep. 1883.38
4041: 15ˢ.11 47′28″.2 B_4, Ep. 1881.38; und derselbe 14ˢ.93 47′35″.0 B_4, Ep. 1883.40
4042: 15ˢ.46 42′27″.0 B_4, Ep. 1881.37; und derselbe 15ˢ.29 42′33″.0 B_3, Ep. 1883.39

4301—4360				4361—4420				4421—4480				4481—4540				4541—4600			
	16h	−15°			16h	−15°			16h—17h	−15°			17h	−15°			17h	−15°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.2	11 18.2	11.7	M	9.4	31 10.7	53.9		7.5	51 4.0	50.3	A	9.2	3 52.1	38.2		8.9	16 19.1	57.2	A
9.5	56.3	35.1		9.4	34.1	41.8		9.0	11.9	33.7	M	8.9	4 14.2	25.6	A	9.4	23.6	10.0	
9.8	57.4	18.6		10	49.8	25.3		9.1	42.4	35.8		9.6	28.8	41.3		9.5	23.8	7.7	
9.5	58.0	56.9		9.4	32 12.7	3.0		9.0	43.2	54.5	A	9.5	32.1	52.3		8.8	40.3	13.0	A
9.7	12 31.5	58.5		8.3	16.7	22.4	A	8.7	52 29.1	27.8	A	8.8	34.1	11.6		9.5	17 5.2	49.7	
9.5	37.2	21.5		9.0	27.2	17.1	M	9.5	36.1	31.2		9.1	5 11.8	26.9	A	9.5	15.4	6.9	
9.8	49.9	0.2		9.6	38.1	56.9		9.0	40.9	59.1	B	9.0	13.2	5.5		8.8	23.3	7.6	A
9.1	13 3.1	59.4		9.5	41.6	51.8		9.5	53 27.9	42.5		7.0	19.2	22.9	A	9.4	36.1	28.5	
9.6	4.0	2.0		8.0	48.2	4.5	A	9.3	45.9	22.0	M	9.3	32.3	20.2		9.5	56.3	7.9	
9.3	8.4	57.3		9.5	33 4.1	22.0		10	47.2	12.5		8.7	39.5	25.3	A	9.8	18 2.8	8.1	
9.8	27.6	36.7		9.6	6.6	46.1		9.2	54 5.0	56.3	A	8.2	59.0	26.0	A	8.3	24.2	34.7	A
9.5	46.2	1.0		9.5	9.0	34.7		10	6.8	48.9		8.3	6 13.7	46.6	A	9.8	24.6	25.7	
9.6	46.7	53.8		9.5	34.1	39.5		9.8	34.8	31.5		8.8	23.8	44.4	A	8.9	43.1	57.7	A
9.8	14 3.0	43.4		9.5	35.6	26.9		9.4	42.7	29.2		9.2	7 17.7	47.7		7.0	49.9	43.3	A
9.8	22.0	57.9		9.5	34 8.9	27.4		8.9	48.2	39.2	A	8.9	34.5	25.0		9.4	19 16.0	33.3	
9.5	51.6	28.0		9.6	13.6	59.2		9.5	53.0	57.1		9.1	35.4	45.2		9.2	17.4	50.4	
9.5	15 57.7	34.5		10	33.8	58.7		8.9	55 9.7	28.8		9.4	38.7	0.4		8.8	54.9	34.9	A
9.0	16 13.6	26.2		10	35.3	56.2		7.5	19.4	39.3	A	9.5	39.3	4.7		9.8	20 1.9	1.0	
8.8	19.9	40.5		9.4	35 6.6	52.0		8.0	45.8	59.0	B	9.8	51.8	43.6		9.5	13.6	58.0	
8.7	17 0.9	50.7	A	9.4	23.9	25.6		9.1	56 3.1	2.8		9.5	56.1	43.4		10	23.2	19.4	
8.5	19.2	44.8	A	9.0	41.7	2.1	A	9.4	19.0	11.8		8.7	58.2	55.7	A	9.5	34.0	33.7	
9.4	18 15.3	41.6		9.2	36 5.1	57.8		9.7	23.7	36.3		7.0	59.2	3.4	K	9.2	35.2	53.5	B
9.3	19 10.8	25.7		9.2	33.6	13.8		9.1	32.4	43.4		9.5	8 59.4	3.8		9.0	43.4	55.5	A
7.0	59.8	52.7	A	9.4	37 24.2	9.7		9.0	43.0	8.1		9.8	9 10.4	41.7		9.2	43.9	25.4	
8.8	20 28.4	5.5		9.6	28.1	59.9		8.7	47.8	3.5	A	9.5	17.2	53.0		7.5	21 9.1	54.3	A
9.5	40.3	44.6		9.8	56.2	9.3		9.4	57 5.4	38.9		9.5	17.5	19.2		9.4	19.3	4.8	
9.0	21 17.2	49.8		9.1	57.7	14.0		9.6	26.3	17.3		9.0	18.3	21.9		8.5	34.9	53.4	A
9.5	32.9	24.9		9.2	38 7.6	14.0	M	9.2	53.6	12.4		9.6	26.3	13.9		8.5	38.7	47.4	A
9.8	34.2	27.1		8.6	56.8	24.9	M	9.0	58 3.9	14.2	A	9.2	26.6	35.4		8.9	45.1	31.4	
9.5	45.2	39.0		9.0	39 8.5	22.5	M	9.9	10.7	21.2		9.0	57.6	35.4		9.5	48.7	20.0	
9.5	22 19.4	30.9		9.1	22.8	27.5	M	9.5	17.4	44.7		7.5	58.1	37.8		9.4	56.1	58.1	
9.8	23 10.8	44.5		7.3	44.1	41.5	A	9.6	29.3	30.9		8.5	10 7.4	2.4	B	7.8	22 9.9	31.0	B
9.7	29.7	30.5		8.0	59.6	5.8	A	9.4	44.3	57.7		7.5	19.7	52.0	A	9.5	10.8	10.6	
9.2	46.7	27.8		9.4	40 28.6	28.6		10	59 2.4	38.7		7.5	40.5	3.4	B	9.2	11.7	18.6	B
7.5	24 22.7	39.8	A	6.5	41 11.0	24.4	A	var	26.3	54.2	B	9.0	53.3	45.3	A	8.8	28.1	52.2	A
9.3	47.8	12.2		9.3	22.6	40.9		9.0	37.6	34.9	M	9.0	11 3.9	11.5	A	8.7	28.2	19.1	B
9.2	54.0	32.1		8.4	47.8	10.6	B	10	48.9	27.1		9.2	12 14.7	18.1	M	9.8	23 3.3	3.2	
var	25 26.8	49.2		9.5	42 6.5	43.7		9.5	0 13.5	7.1		9.5	18.1	54.1		10	22.7	15.2	
9.6	31.2	58.0		9.1	37.0	51.5		9.5	39.6	55.9		9.1	26.2	46.3		9.2	23.6	51.0	
8.3	48.2	13.0	A	9.5	43 18.6	39.4		8.0	57.1	7.7	B	9.6	45.8	40.8		9.2	32.1	47.1	
9.7	58.8	10.1		8.8	57.6	38.0	A	9.5	1 2.0	25.8		8.5	53.8	31.4	M	9.3	32.8	35.9	
9.5	59.5	4.2		9.5	44 21.1	40.7		8.8	3.1	0.3	M	9.5	13 6.8	53.5		9.5	37.0	29.2	
9.5	26 11.2	53.9		9.0	23.0	53.4	A	8.8	3.2	38.5		9.5	11.9	31.4		9.5	46.0	33.5	
9.5	48.6	55.0		8.9	34.0	27.7	A	9.1	15.8	45.7		9.3	19.6	23.5		9.8	55.2	14.3	
9.3	59.7	34.3		9.0	36.4	57.2	A	9.5	44.2	52.5		9.1	24.4	33.9		8.7	24 0.1	58.9	A
8.2	27 5.5	57.2	A	9.4	47.5	25.3		8.0	52.3	58.5	A	9.4	31.9	5.5		9.9	18.7	51.9	
9.6	37.2	37.6		9.5	45 52.1	9.3		2	2 4.0	32.2	A	9.4	48.6	58.8		9.3	23.9	49.0	A
8.9	45.1	7.4	M	9.0	47 9.0	48.0	A	9.6	18.0	57.3		9.5	50.7	20.0		9.3	29.3	32.7	
9.0	49.2	46.6		8.2	48 0.5	7.3	K	8.8	29.5	14.0		9.5	54.7	40.8		9.2	25 2.7	36.8	
9.2	28 10.7	49.1		8.2	9.8	15.1	A	9.5	35.4	16.1		9.5	56.2	44.1		9.4	8.2	7.7	
9.4	16.5	24.1		9.3	10.0	44.2		9.3	45.1	27.7		9.0	56.4	46.7	M	9.6	18.1	25.0	
9.8	35.2	13.2		8.6	22.5	42.1	A	8.9	48.8	28.4	A	9.5	14 11.2	18.9		9.0	26.3	1.3	A
9.6	51.2	12.2		9.5	29.3	16.4		8.6	49.4	1.7	K	9.6	49.1	30.5		9.7	33.9	1.2	
9.0	53.2	18.6		9.0	37.5	17.7	M	8.9	3 0.5	25.6	A	6.7	15 16.6	53.5	A	9.8	40.3	43.1	
9.8	29 33.7	15.3		9.2	49 5.4	41.5		9.2	5.7	20.4		10	23.1	34.4		9.7	26 7.1	46.5	
9.3	37.0	18.7		10	13.6	2.1		9.2	14.8	29.2		9.6	33.5	53.8		9.6	12.5	5.8	
9.6	41.2	38.2		9.1	24.9	34.6	M	9.2	18.9	20.5		9.4	35.0	56.2		9.3	23.4	25.4	
9.4	30 1.7	43.3		9.3	27.8	23.2		9.6	41.6	11.8		9.8	48.4	57.2		9.7	29.0	28.1	
9.5	2.7	47.4		9.4	27.9	51.2		9.8	42.4	36.6		9.1	16 4.7	40.8	A	9.8	43.4	32.0	
9.3	36.3	16.5		7.8	50 40.1	34.7	B	9.0	46.9	38.0		9.5	17.4	3.0		10	44.6	51.1	

4601—4660

	17h		−15°	
m	m	s	′	
9·5	26	59.1	18.6	
9·5	27	6.6	47.0	
9·8		13.3	0.1	
9·4		18.0	25.7	
9·4		26.7	10.8	
8·9		29.6	43.8	M
9·5		30.2	7.0	A
9·8		34.3	27.3	
9·5		38.1	44.2	
9·2		56.0	25.3	
9·5	28	0.2	16.4	
9·5		1.1	4.7	
8·6		4.1	22.9	A
9·1		27.2	35.3	
9·8		29.3	27.2	
9·1		38.0	50.7	A
9·3		38.5	25.2	
9·3		41.7	15.7	
8·6	29	6.6	35.2	
9·0		7.8	54.9	A
3·8		17.1	18.1	A
6·5		18.0	28.5	A
8·8		18.9	43.9	
9·4		20.5	32.8	
9·8		31.1	17.4	
9·7		46.2	15.7	
9·0	30	8.0	58.4	B
9·1		8.8	47.9	
9·5		10.5	21.6	
9·8		23.5	58.7	
9·4		23.6	41.9	
9·4		38.1	17.7	
9·4		39.7	25.9	
9·5		53.0	57.3	
8·8	31	4.5	40.7	A
9·5		34.4	3.8	
9·9		35.8	23.0	
9·7	32	5.9	34.4	
9·9		7.1	18.1	
9·0		13.7	26.8	A
9·3		20.0	48.4	
10		26.9	15.8	
9·8		28.1	37.3	
9·4	33	5.6	43.5	
9·2		7.5	25.6	
8·7		10.7	12.8	A
9·8		15.9	35.0	
9·4		17.3	26.4	
10		25.1	26.7	
9·6		29.7	12.4	
8·5		53.6	38.8	B
8·9	34	8.1	54.9	M
10		13.2	14.6	
9·7		16.6	22.8	
7·3		20.3	29.0	L
9·8		35.2	58.6	
9·3		36.8	53.9	
9·1		36.8	52.8	M
9·5		54.1	42.1	
9·5		58.3	20.0	

4661—4720

	17h		−15°	
m	m	s	′	
9·4	34	59.5	23.0	
9·5	35	26.0	25.7	
10		47.9	8.4	
9·4		53.4	22.5	
9·4	36	4.7	42.6	
9·8		29.3	2.4	
10		31.2	3.8	
9·5	37	16.1	20.5	
9·2		31.3	32.2	
9·9		35.0	30.0	
9·1		46.1	43.3	
9·5		55.2	11.6	
9·6	38	9.5	59.0	
9·4		11.1	19.9	
8·0		16.5	56.4	A
9·1		31.3	5.5	
9·5		33.6	38.2	
9·5		46.1	41.0	
8·7		48.5	27.2	A
9·4		54.9	3.2	
9·5	39	17.9	34.8	
9·5		23.0	57.3	
9·0		45.0	56.7	
9·5		46.7	35.3	
8·6	40	6.3	6.1	A
9·8		31.1	19.5	
9·9		38.8	25.6	
9·7		56.6	27.8	
9·3	41	18.5	23.6	
9·8		46.1	41.2	
9·1		51.8	8.9	
10	42	1.5	35.0	
8·0		3.6	55.3	A
9·3		10.5	23.4	
9·5		14.6	47.2	
9·5		23.0	31.1	
9·5		50.7	13.5	
9·8	43	4.6	16.8	
8·7		10.3	26.5	A
9·4		19.5	49.1	
9·6		28.7	16.5	
9·0		37.7	27.1	A
9·8		43.6	15.2	
9·4	44	1.7	14.0	
9·8		8.5	52.6	
8·7	45	7.2	37.3	A
9·4		13.1	51.4	
9·5		22.9	0.3	
9·6		26.0	52.0	
9·8		45.8	8.2	
9·4		47.2	11.1	
9·5	46	10.0	51.1	
9·0		20.1	41.5	A
9·4		28.9	31.0	
9·9		33.4	18.0	
9·3		46.2	41.5	
9·2		49.7	41.8	A
8·8		59.5	48.9	A
9·5	47	14.6	13.2	
9·5		17.5	19.5	

4721—4780

	17h		−15°	
m	m	s	′	
9·1	47	29.1	40.2	A
5·9		58.8	46.6	A
9·2		59.7	47.3	A
8·3	48	0.6	9.2	K
9·1		3.3	1.3	
8·6		3.9	18.1	WC
9·4		12.6	27.4	
9·0		17.8	2.2	K
8·0		28.8	39.6	A
9·9		31.7	12.8	
9·0		39.0	24.1	
9·4		45.5	39.5	A
9·4		48.2	45.7	
9·5		48.9	48.8	
9·6		58.6	27.2	
9·4		58.7	31.7	A
9·4	49	12.7	10.0	
9·8		16.4	45.0	
9·5		23.3	33.4	
9·5		26.1	18.3	
9·4		29.3	29.1	A
9·8		43.8	32.7	
9·4		49.0	21.5	
9·7		49.0	24.5	
9·5		49.0	59.5	
9·3	50	12.6	16.7	
8·9		18.0	35.4	A
9·5		26.8	16.1	
9·2		27.7	7.2	
9·4		31.9	21.6	
10		32.8	13.8	
8·6		47.4	12.2	A
9·1		48.1	18.5	
9·8		48.5	15.7	
10		50.8	11.1	
7·9	51	13.7	8.5	A
9·3		14.9	42.7	
9·8		16.6	5.0	
9·8		41.4	28.5	
9·4		43.7	12.0	
9·5		46.5	58.8	
9·8		46.7	11.8	
9·4	52	4.1	50.2	
9·4		9.2	39.5	WC
9·2		11.6	20.9	
9·8		17.9	28.3	
8·7		18.8	47.1	A
8·5		24.5	2.7	A
8·2		27.1	15.9	A
9·5		32.1	48.4	
9·8		37.8	48.8	
9·8		43.2	9.2	
10		46.8	5.6	
9·4		58.1	43.4	
8·2		58.5	20.6	A
9·5		59.0	4.8	
9·0	53	3.9	40.8	
9·1		31.2	38.6	A
9·5		33.1	13.3	
9·5		40.0	19.5	A

4781—4840

	17h—18h		−15°	
m	m	s	′	
9·5	53	47.8	32.5	
9·5		50.6	48.8	
9·8	54	0.7	41.9	
9·4		12.1	17.1	
9·5		18.5	54.4	
9·8		28.0	57.5	
9·5		45.6	50.0	
10		46.5	37.9	
9·5		51.6	27.0	A
9·7		53.0	35.9	
9·8	55	23.5	39.7	
9·4		33.6	20.2	
9·3		41.0	21.3	
9·5		42.0	3.8	
10		52.5	57.6	
9·5		55.4	49.5	
9·5		56.2	44.2	
9·5		57.3	4.0	
9·5	56	1.3	28.8	
9·2		9.2	38.7	A
9·3		11.8	4.9	
9·4		17.3	28.3	
7·8		22.6	21.9	M
9·4		25.5	30.7	
9·0		25.7	42.7	A
8·8		28.4	0.8	M
9·4		35.5	36.9	
7·7		38.3	17.2	K
9·7		49.0	31.4	
9·7	57	20.8	13.3	
9·8		40.4	5.1	
9·3		45.6	20.9	
9·3		55.4	3.5	A
9·5		55.9	27.7	
9·8		56.2	17.1	
9·7		57.9	49.6	
9·1	58	12.7	40.8	
9·5		15.2	45.2	
8·9		46.7	40.3	A
9·2		53.0	4.3	A
8·9		56.6	34.1	A
9·1	59	9.5	0.2	A
9·1		20.6	49.0	
9·4		24.0	29.2	
9·1		39.1	50.5	
8·5		39.5	58.6	A
9·3		48.2	15.7	
9·5	0	11.1	47.2	
9·3		24.5	2.6	A
9·0		36.4	2.9	A
9·3		36.8	9.3	
8·9		43.0	32.7	A
9·2		51.0	20.5	
8·5		51.5	4.5	A
9·3		53.0	18.8	
10	1	6.7	42.6	
10		8.8	52.3	
9·5		14.6	43.6	
9·5		18.2	43.9	
8·3		24.9	18.2	A

4841—4900

	18h		−15°	
m	m	s	′	
9·5	1	30.3	27.2	
9·0		31.8	33.9	A
9·0		40.7	16.0	A
9·5		50.2	20.2	
9·5	2	15.9	5.3	
9·5		20.6	49.5	
9·5		22.0	33.4	
9·3		29.5	53.3	
8·0		49.6	54.6	A
10	3	2.3	35.5	
9·1		15.1	43.6	
9·3		15.4	26.8	A
8·4		23.8	13.7	A
8·7		24.7	36.9	A
9·4		29.1	25.5	
8·0		31.2	42.3	A
9·3		33.4	7.1	
9·7		38.9	51.8	
9·1		46.7	18.3	A
9·9		56.3	1.3	
9·0		58.2	35.9	A
8·8	4	5.3	12.5	A
9·4		7.6	48.2	
7·8		9.1	24.6	A
9·0		15.4	39.4	A
9·3		15.9	2.8	
9·5		28.0	33.2	
8·0		38.3	13.4	A
9·3		41.2	19.7	
9·4		46.1	27.6	
9·4		55.1	51.7	
9·5		57.2	44.7	
9·2	5	11.6	51.4	
7·5		15.7	37.6	A
9·2		18.3	25.4	
9·0		20.6	44.1	A
9·5		29.0	14.9	
9·1		29.1	50.6	A
9·8		32.4	1.5	
9·7		45.4	53.5	
9·9		48.3	12.6	
9·8		56.2	15.3	
9·5		58.1	23.4	
9·5		58.3	8.0	
9·5	6	9.2	40.6	
9·5		11.8	11.6	
9·3		15.3	3.9	
9·3		19.0	57.2	
7·1		38.4	25.5	A
8·9		48.8	42.2	A
9·8		52.5	14.5	
9·6		53.7	0.8	
9·3	7	2.1	59.8	A
9·5		19.1	38.5	
9·5		19.2	5.8	
8·5		19.6	56.1	A
9·5		30.0	56.2	A
9·8		35.9	22.4	
9·8		39.4	8.8	
10		53.3	2.3	

4834: 51:39 4′36″·5 B_2, Ep. 1872.53

4901—4960				4961—5020				5021—5080				5081—5140				5141—5200			
	18h	—15°			18h	—15°			18h	—15°			18h	—15°			18h	—15°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.6	8 1.8	31.5		9.4	16 52.0	14.0		9.5	26 29.9	19.9		10	36 50.2	56.6		9.6	46 17.7	44.3	
9.5	9.9	20.4		8.7	56.5	12.1	A	9.5	48.3	52.0		10	51.5	52.7		9.5	21.3	27.5	
9.5	12.1	41.9		9.3	59.4	30.0		9.2	27 18.6	5.4		9.5	53.4	4.8		5.7	23.3	46.4	A
9.3	24.6	59.5		9.4	17 0.8	7.1		9.0	20.2	49.9		9.4	37 3.7	28.1		9.4	23.8	19.5	
9.5	28.9	34.0		7.8	20.0	13.6	A	9.5	20.5	7.9		9.4	41.5	33.8		9.8	25.6	38.1	
9.3	30.8	42.4		9.8	28.4	29.4		9.5	29.8	56.8		8.0	46.5	37.2	B	8.8	29.1	24.4	
9.2	48.6	26.7		9.8	40.7	52.3		9.4	28 0.6	1.8		9.5	38 10.8	20.0		9.3	43.0	12.3	
9.0	55.1	45.7	A	9.2	41.9	53.6	M	9.6	18.5	13.7		9.4	11.5	38.3		9.4	51.0	42.4	
9.5	56.5	29.9		10	18 0.1	21.6		9.4	21.4	31.8		9.1	28.4	0.8		8.2	55.5	55.2	B
9.0	57.6	39.5	A	7.5	4.2	42.3	A	7.5	51.1	8.4	A	9.4	33.4	8.2		9.3	58.4	54.0	
6.7	9 18.9	28.9	A	9.2	19 0.7	46.9	A	9.3	29 3.6	8.0		8.0	34.7	3.8	B	9.2	47 23.0	28.1	
9.5	41.5	53.1		7.3	12.4	27.6	A	9.0	7.1	2.8	M	9.4	39 26.9	17.5		9.2	33.4	8.3	M
9.7	55.6	38.1		9.8	31.3	29.4		8.5	24.9	32.7	A	9.5	29.6	56.3		9.1	48 13.4	26.2	
9.6	56.8	40.0		9.9	37.0	27.7		9.5	29.9	29.0		9.8	36.0	34.8		7.5	29.8	2.6	A
9.5	10 7.6	21.3		9.3	52.7	35.8	A	8.8	30.1	3.0	A	9.4	49.5	39.9		9.5	39.5	52.9	
9.2	7.9	29.5	A	9.8	20 6.9	50.6		9.8	43.8	40.9		9.5	57.7	4.0		9.6	58.5	52.9	
9.8	18.2	49.0		9.1	9.9	53.5	M	9.5	52.4	25.2		9.4	40 11.4	0.0		8.9	49 14.0	52.7	M
9.8	21.4	14.6		9.8	12.0	17.7		9.5	30 2.0	14.4		9.2	13.0	26.0		9.8	36.8	15.3	
9.5	35.7	53.9		9.3	28.8	38.4	A	9.5	6.4	30.0		8.2	19.0	27.1	A	8.8	50 9.2	31.0	A
9.5	41.8	48.3		9.5	52.2	34.4		9.8	20.4	6.2		8.5	29.9	11.0	M	9.5	32.5	45.0	
9.1	42.1	31.7	A	9.3	58.1	22.3		9.5	39.5	34.1		9.8	42.4	58.4		9.8	49.0	11.1	
9.2	57.5	14.0	M	8.9	59.8	22.3		9.8	41.8	55.5		8.6	54.3	18.5	A	9.6	49.3	27.4	
9.0	11 2.5	39.8	A	9.6	21 5.2	41.3		7.7	45.2	9.6	B	9.5	54.4	16.1		9.8	55.9	22.7	
9.5	10.7	56.2		9.5	9.8	9.3		9.8	46.3	41.2		9.4	56.4	43.8		9.3	57.5	38.4	A
9.5	14.9	38.6		9.8	10.0	30.4		9.4	46.8	47.0		9.5	41 0.9	55.4		9.6	51 25.8	27.4	
10	33.4	10.3		9.7	43.7	31.7		9.2	50.7	23.0		9.5	18.0	40.6		8.7	26.6	30.5	A
5.7	48.1	53.4	A	9.4	49.3	25.3		9.5	31 11.8	49.8		8.7	27.4	12.5	A	9.3	35.0	0.4	
9.5	53.7	43.1		9.8	22 6.8	44.0		9.4	17.4	13.1	A	9.6	31.3	28.6		8.3	40.5	53.7	A
9.0	12 0.2	16.8	A	9.5	9.5	13.7		9.0	23.4	17.0	A	9.4	33.4	57.4		9.0	44.5	56.6	A
9.0	2.0	7.6		9.8	20.0	8.1		9.4	27.7	18.6	A	9.0	37.4	47.3	M	9.5	45.2	14.6	
9.5	2.6	51.6		8.3	20.2	50.1	M	9.4	41.1	26.5	A	9.3	52.1	35.5		10	46.4	16.6	
9.4	7.7	53.5		10	28.9	19.1		10	47.8	54.4		9.5	42 10.9	10.4		9.5	52 6.0	43.8	
9.1	10.0	27.2		9.5	31.6	22.5		9.6	52.8	52.2		9.1	13.9	26.4	M	10	8.2	16.6	
9.3	27.5	7.5		9.5	34.8	41.0		9.6	54.0	54.7		9.6	20.9	57.6		10	10.5	7.9	
9.5	30.3	30.7		8.8	37.5	1.5	A	9.5	58.3	59.1		9.6	26.8	24.2		9.7	25.9	13.4	
9.4	31.8	33.1		9.4	44.3	28.3		9.0	32 13.4	37.2	A	9.5	33.0	30.4		10	27.9	4.1	
9.5	40.9	21.5		10	46.5	43.7		9.4	22.4	38.4		9.0	37.3	25.1	A	9.8	32.8	28.2	
7.2	43.9	17.3	A	9.9	50.2	56.8		9.2	25.9	33.5		9.5	42.6	16.8		9.0	40.3	34.0	A
8.7	46.7	1.8	B	10	56.1	5.3		8.7	42.2	1.1	A	9.5	43.4	29.5		9.5	41.0	46.6	
9.4	13 8.7	25.8		9.8	23 20.5	47.0		9.5	33 4.9	59.0		9.1	48.4	45.6		9.9	45.4	18.5	
9.5	10.5	5.6		8.0	32.0	16.8	B	9.8	26.1	22.7		9.6	52.9	13.2		9.8	49.5	48.8	
9.2	23.6	42.8		9.1	36.3	46.1		8.6	50.3	47.5		9.5	43 11.8	19.2		10	51.7	2.5	
9.3	32.9	16.9		8.5	24 7.8	37.8	A	8.2	56.3	59.4	B	9.5	13.9	8.5		10	56.2	13.5	
9.5	36.8	18.6		8.5	18.2	47.9	A	9.7	34 3.2	18.5		9.3	17.2	49.7		10	53 8.3	8.1	
9.3	47.3	9.1		9.0	20.6	0.9		9.4	12.3	48.9		9.1	21.3	21.3	A	6.5	16.1	28.8	A
7.0	57.0	8.9	A	9.0	29.2	56.4	M	9.5	13.5	52.5		9.6	26.4	16.9		9.8	31.2	12.8	
9.5	14 3.8	33.8		9.3	48.0	17.4		7.3	20.7	39.4	A	9.8	31.4	56.1		9.2	38.0	59.0	
9.5	7.9	41.0		9.5	50.9	37.4		9.0	24.3	55.6	M	9.8	32.7	25.9		9.9	49.2	18.3	
9.5	29.4	27.5		9.9	25 1.7	6.7		8.9	27.2	31.2	A	9.0	59.7	35.6	M	9.4	59.0	48.2	
9.5	31.2	58.7		9.2	10.5	5.2		10	54.8	19.9		10	44 14.9	47.4		8.8	54 2.1	44.3	A
9.5	39.3	25.1		9.5	27.0	50.4		9.0	35 3.3	51.1		9.8	24.2	39.7		9.6	4.1	6.6	
9.0	50.1	40.8		9.8	29.8	34.5		9.8	15.4	56.7		8.0	37.4	29.8	A	9.0	11.1	57.7	
9.1	56.7	26.1		9.6	37.1	31.5		9.7	17.9	2.5		8.6	55.0	36.2	A	9.8	19.0	50.4	
9.4	15 9.3	25.3		9.7	38.5	34.7		10	19.1	1.3		9.7	57.5	42.4		9.8	21.7	18.8	
9.5	23.7	48.3		9.8	40.5	12.3		9.8	22.8	56.2		9.6	45 17.9	4.5		9.5	21.8	52.5	A
9.8	34.0	33.6		8.9	45.5	52.0	A	8.7	27.7	24.5	A	9.8	22.4	28.1		9.5	38.0	45.5	
9.2	38.7	56.8		9.1	46.2	27.8		9.5	40.3	23.0		9.4	37.9	47.7		9.1	39.1	57.6	
9.5	52.0	33.3		9.1	46.2	25.2		9.5	50.1	53.7		8.7	54.4	11.1	K	8.9	42.9	22.5	
8.3	16 20.7	27.7	A	9.4	26 4.9	38.1		9.8	36 10.3	16.1		9.8	46 5.8	24.4		8.3	47.6	4.9	B
9.5	43.7	43.1		9.6	12.0	0.7		9.5	27.6	53.2		9.0	10.4	54.7		9.1	48.5	43.3	

5043: 45°34 9′40″8 B_4, Ep. 1872.63

5201—5260				5261—5320				5321—5380				5381—5440				5441—5500			
	18h—19h	—15°			19h	—15°			19h	—15°			19h	—15°			19h	—15°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.1	54 55.3	52.9	A	9.4	2 48.8	52.5		9.1	12 18.2	33.9	A	9.4	24 23.7	42.7		8.5	34 56.1	30.7	
9.3	56.2	35.8		9.5	51.8	51.7		9.5	57.5	46.4		9.0	34.8	37.4		9.8	35 16.1	4.4	
9.8	55 9.1	14.4		9.1	57.8	46.5	A	9.5	13 0.5	47.1		9.5	41.7	34.5		9.5	16.7	19.8	
8.5	13.0	29.5	A	8.4	3 0.6	34.6	A	9.5	23.3	2.9	A	9.5	43.6	25.5		6.0	17.0	48.1	L
9.5	15.1	1.0		8.7	6.6	26.5	A	8.7	25.5	50.6	A	9.1	51.7	48.7		9.1	40.4	37.2	
9.7	27.6	21.3		9.8	30.4	13.5		9.3	35.2	14.8		7.8	25 0.8	18.7	B	9.5	58.7	56.7	
10	33.0	10.1		10	35.9	45.7		9.5	44.8	58.7		8.8	10.3	3.7	A	9.5	36 3.7	24.4	
9.4	33.9	39.0		9.3	51.3	43.1		9.4	50.3	9.5		9.5	16.2	56.4		9.1	8.7	20.7	R
9.5	34.7	14.7		9.4	4 0.4	23.7	A	9.5	56.5	58.5		9.8	18.7	38.0		9.4	28.4	51.7	
9.4	46.0	49.1	A	9.5	13.0	3.1		9.5	14 9.5	48.2		9.6	33.7	24.3		9.4	29.6	26.2	
9.1	49.2	33.3	A	10	25.3	59.1		9.0	38.7	6.8	A	9.8	44.8	24.1		9.3	30.1	56.5	
9.5	56 3.5	53.5		10	34.4	43.6		8.5	44.2	50.7	M	9.4	46.7	21.7	M	9.6	33.3	15.6	
9.5	20.1	9.8		9.3	37.7	13.4		8.5	44.8	11.0	A	9.3	47.8	31.3		9.1	56.7	29.1	
9.8	23.3	48.5		8.7	38.9	15.2	A	9.0	57.0	53.4		9.2	55.4	32.4		9.5	58.6	33.8	
9.5	30.3	52.8		9.7	41.2	20.1		8.8	15 2.0	33.7		9.4	59.3	28.5		8.7	37 0.1	27.2	A
10	40.0	10.7		9.9	46.9	38.2		9.5	13.6	20.4		9.2	26 1.6	8.3	A	9.4	8.6	30.9	
9.8	50.1	8.1		9.7	5 3.9	53.6		9.3	20.0	52.7		9.0	4.3	23.2	M	9.5	9.4	25.6	
10	57 2.7	2.3		9.2	22.5	40.5	A	9.2	49.0	57.2		9.5	12.6	19.9		9.0	9.4	40.1	
10	6.8	26.1		9.1	25.1	47.4	A	9.5	16 6.8	31.7		9.5	19.4	10.5		8.3	54.9	40.8	A
9.1	8.8	43.2		9.5	36.4	53.0		9.5	27.1	40.5		9.8	27.1	3.1		9.5	38 8.3	0.0	
9.5	8.9	37.6		9.3	36.8	58.2		8.2	38.2	18.2	B	9.9	27 9.4	34.2		9.3	26.5	59.1	
9.1	10.5	54.6		9.0	47.5	2.9	K	9.5	51.3	4.0		10	12.5	43.2		9.0	32.1	14.1	M
5.8	21.6	52.6	B	9.6	6 6.3	48.9		9.5	17 1.0	45.4		9.2	21.3	28.5		9.0	32.4	24.0	
9.4	29.5	49.7		9.1	25.9	37.9	A	9.8	18.7	9.7		9.0	33.2	52.5		9.5	33.2	31.6	
9.0	44.6	52.1	M	9.5	34.1	32.5		9.8	19.6	30.2		9.6	33.6	6.1		8.8	35.9	42.2	A
9.0	47.6	4.9		9.4	37.0	12.3		8.7	33.3	55.7	M	9.5	40.0	11.7		8.6	39 14.7	21.1	
9.8	50.1	10.7		9.5	52.1	4.4		10	33.4	52.4		9.0	28 46.5	13.0	M	9.0	32.0	38.4	
8.8	54.9	21.5	M	9.5	7 22.0	54.8		6.5	55.7	20.2	L	9.4	29 15.1	31.2		9.2	49.4	25.0	
9.5	58 2.4	24.6		9.3	24.7	54.8		8.5	18 1.9	29.1	B	9.5	27.4	3.5		9.2	51.8	11.6	
9.5	4.6	54.7		7.7	27.1	5.2	Sj	9.1	3.6	37.1		8.5	34.5	5.2	K	9.6	59.0	26.6	
7.8	26.2	41.3	A	9.5	43.2	20.2		9.3	31.1	55.6		8.7	51.4	18.2	M	9.8	40 14.0	29.1	
9.5	33.0	17.3		9.5	52.8	11.3		9.0	35.6	50.3		9.0	52.3	50.2		8.6	44.1	26.6	A
9.2	43.4	20.2	M	9.0	53.9	50.3	M	8.5	42.9	34.6	B	9.1	30 4.8	46.5		9.4	59.6	47.2	
9.1	51.8	50.5		9.5	8 20.1	12.2		9.4	49.9	35.4	M	9.6	10.2	33.2		9.5	41 4.1	6.3	
9.8	54.5	53.0		9.5	22.5	31.8		9.8	55.7	22.8		9.5	27.6	24.7		9.3	23.3	11.4	
9.6	59.5	34.5		9.5	35.7	24.3		10	19 5.7	23.6		9.5	28.4	7.4		9.4	37.0	38.9	
9.4	59 7.8	30.8		9.6	36.0	28.8		9.1	7.6	35.9	M	9.5	48.4	49.0	M	9.5	48.0	24.3	
10	8.0	6.7		9.1	48.6	1.8		9.7	14.0	28.2		9.2	31 10.7	24.8		7.8	42 10.2	17.5	A
9.2	16.6	22.9		9.6	56.6	11.0		9.5	39.2	36.0		9.5	20.9	42.3	M	8.0	13.5	47.1	A
9.2	18.3	3.3		9.8	9 17.2	52.5		9.3	20 18.6	33.5		6.8	38.1	29.6	A	9.9	36.9	59.4	
9.5	20.0	8.5		9.5	19.6	11.5		9.4	19.5	19.5		7.8	41.0	10.7	A	8.3	43 1.0	31.4	M
8.4	30.8	20.8	A	9.1	23.1	13.3		7.2	20.9	23.4	B	9.5	48.2	47.4		9.5	11.5	48.3	
9.2	41.8	26.8	A	9.8	28.9	5.2		9.4	36.6	46.7		9.4	51.5	15.3		8.8	14.8	58.2	A
9.5	0 4.5	17.6		9.1	48.6	0.2	M	9.4	44.3	9.9		8.9	55.5	36.5	M	7.0	30.4	8.3	M
9.8	10.7	48.2		10	10 12.0	19.2		9.9	50.2	29.2		9.6	32 1.9	30.2		9.5	40.6	0.4	
9.1	44.1	59.0		9.3	13.2	42.3		7.1	21 17.9	39.1	B	9.5	5.9	32.7		9.5	47.6	58.2	.
9.0	44.4	30.5	A	9.8	16.0	21.6		8.8	46.6	31.2	A	9.7	14.0	11.2		9.3	59.9	10.5	
9.4	45.8	24.5	WC	8.8	25.3	3.5	Sj	9.1	53.1	35.9	A	8.8	19.8	53.0		9.1	44 5.6	54.5	
9.3	46.5	9.1		9.8	43.6	0.0		9.9	22 25.8	10.0		9.8	23.4	48.1		9.5	9.5	48.0	
8.9	59.8	46.4	M	6.0	44.4	46.9	B	9.5	28.2	31.0		9.8	40.5	20.2		8.5	14.7	49.9	A
9.5	1 19.1	29.4	A	10	11 1.4	7.8		9.5	31.4	15.6		8.3	44.9	44.1	M	9.3	28.6	57.5	
9.5	42.3	28.9		9.1	1.6	17.9	A	9.7	35.9	8.7		8.9	33 11.4	1.5	K	8.3	29.8	47.2	A
9.2	51.3	53.1	A	9.6	6.0	43.1		9.5	48.7	57.2		9.6	49.3	57.1		9.3	46.9	15.0	
9.4	53.8	59.9		9.0	27.0	54.5	M	9.5	23 3.5	16.9		9.5	34 2.0	10.0		8.9	51.4	26.6	
9.1	54.3	26.6		9.3	35.3	21.6		9.8	14.0	24.3		9.5	3.4	27.6		8.7	53.8	24.5	A
9.5	2 23.9	25.9		9.6	47.7	54.3		9.5	39.1	55.7		8.5	4.0	18.0	M	9.8	53.9	4.1	
9.4	25.8	57.2		9.6	47.8	51.2		9.7	46.8	25.7		9.5	6.5	4.1		9.3	54.5	35.2	
10	29.6	54.3		8.8	12 3.5	37.6	A	9.5	47.1	10.5		8.7	35.6	41.1	R	9.3	45 2.3	17.2	
7.5	35.0	18.7	A	9.4	9.7	26.9		9.1	51.3	0.9	K	9.6	50.4	14.0		9.8	18.9	8.0	
9.5	46.8	45.6		9.5	11.0	29.6		9.3	24 9.4	14.3	A	9.5	52.7	38.5		9.8	38.8	11.0	

5444: 17ʰ42 48′9″.1 B_4, Ep. 1871.57

5501—5560					5561—5620					5621—5680					5681—5740					5741—5800				
	19h		−15°			19h—20h	−15°				20h	−15°				20h	−15°				20h	−15°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.0	46	4.1	40.6		9.5	59	57.1	8.6		8.7	11	56.6	32.6	A	9.5	20	39.0	31.5		9.7	31	2.8	45.7	
9.3	47	30.2	52.9		9.1	0	6.1	11.7		8.3	12	4.9	11.5		9.4		52.2	51.1		10		9.4	4.1	
9.3		32.9	16.5		9.2		14.6	9.4		9.5		13.9	17.3		8.3		54.2	32.0	A	5.3		9.6	27.0	K
8.0		43.1	46.8	A	6.6		18.5	26.7	A	9.1		23.3	5.0		9.8	21	25.6	3.0		9.3		13.1	31.4	
9.3		52.8	20.8		8.5		38.4	50.1	A	9.3		32.8	51.7		9.5		30.6	24.7		9.5		25.3	52.6	
9.4	48	4.6	41.0		9.5		57.6	44.6		7.0		37.9	14.0	A	9.5		32.9	51.3		8.5		26.1	28.6	B
10		7.1	6.7		9.8	1	37.6	7.6		8.8		43.1	55.7	M	9.4		45.7	10.2		9.4		45.3	16.3	
9.8		9.8	49.2		9.4	2	17.9	37.5		8.0		49.1	52.6	M	9.8		59.0	31.6		9.5		53.4	55.1	
9.7		15.6	3.0		9.5		18.3	42.0		3		51.8	13.8	A	9.5	22	3.2	34.8		9.8	32	5.3	53.2	
9.5		34.5	31.6		9.5		20.8	31.0		9.2		55.0	42.0		9.8		3.7	7.3		8.3		19.2	53.1	A
9.5		43.4	16.0		9.8		21.6	47.0		8.8	13	3.4	17.0	A	9.6		5.0	4.0		9.8		29.4	3.0	
9.0	49	4.2	39.3		9.5		47.2	40.2		9.0		15.4	28.3		9.5		7.1	48.6		9.0		30.6	55.4	A
7.8		20.1	50.1	B	9.1		54.1	8.7		9.2		17.8	30.0		9.1		8.3	35.4		8.9		33.3	55.0	A
9.6		21.5	2.8		9.8		54.7	0.3		9.4		22.2	25.2		9.5		26.4	11.7		9.0		40.8	25.5	
10		23.0	48.7		9.5	3	1.6	23.0		9.8		34.8	13.5		9.8		27.5	26.7		7.9		55.4	1.2	M
5.3		43.7	52.4	L	8.5		6.0	55.2	A	9.4		35.5	49.8		6.3		55.9	32.1	M	8.8	33	0.3	39.5	M
10		47.1	31.3		9.6		56.8	27.1		10	14	5.9	11.4		9.0	23	11.6	16.9		9.7		12.4	16.5	
8.2		56.9	21.7		9.3	4	22.9	21.6		9.9		15.0	4.5		8.8		34.3	29.1	M	9.5		19.8	47.1	
9.5	50	9.3	5.2		8.8		29.8	37.2		9.6		21.4	4.9		10		50.3	9.5		10		21.8	51.9	
9.5		28.4	17.9		8.8		35.4	41.7		8.9		27.9	3.8	Sj	9.6		56.5	32.0		9.5		32.1	54.2	
9.5		30.4	6.4		9.0		35.5	53.7	M	9.0		59.6	42.7		9.0	24	10.6	45.2		9.6		42.1	4.9	
9.5		54.7	59.6		9.7		52.2	33.9		9.5	15	0.4	58.3		9.5		18.2	49.2		9.5		42.7	25.8	
9.0		55.2	23.2		9.8	5	12.8	11.3		9.5		7.5	37.9		9.5		35.8	57.5		9.5	34	3.0	3.6	
9.7	51	22.6	31.6		8.5		14.4	51.3	A	9.2		9.4	56.5		9.5		39.4	47.6		10		4.6	20.7	
9.7		23.1	48.0		9.2		18.0	28.1		9.1		18.4	14.4		9.9		45.3	29.4		9.5	35	17.7	25.4	
9.5		35.9	48.8		9.1		21.0	28.9		9.3		21.9	16.8		8.9		52.9	34.2	A	9.4		23.5	0.1	
9.4	52	12.5	43.7		9.3		39.7	47.9		9.4		50.0	7.3		9.8		53.8	29.6		7.8		27.3	42.3	A
9.6		12.5	51.0		9.1		52.9	41.5		9.5		51.9	31.1		8.5	25	13.5	42.3	A	9.8		50.2	1.5	
9.8		13.4	23.0		9.5		54.4	21.9		9.0		55.3	26.8	A	9.8		25.9	48.2		9.1		50.8	30.2	A
9.3		54.4	16.2		9.3	6	10.2	15.8		9.1	16	14.1	45.9		9.6		26.0	45.4		9.5		52.9	7.3	
8.8	53	1.4	4.8	M	9.7		17.7	22.5		9.5		22.0	47.6		9.1		28.3	54.2		9.8		56.2	28.9	
9.0		4.2	37.2		8.0		22.9	46.0	A	9.5		22.8	38.4		9.5		55.2	6.3		8.6	36	18.5	33.7	A
9.4		9.7	56.2		9.0		31.9	47.3	A	9.5		24.7	32.0		9.6	26	3.2	2.4		10		19.6	22.1	
8.0		9.9	8.4	A	9.3		41.7	12.7		9.5		34.0	49.6		9.0		12.2	6.4		9.7		28.8	37.7	
9.1		55.8	28.3		9.5	7	2.8	27.8		9.7		52.6	59.9		9.0		13.5	52.8	M	8.8		39.8	28.7	A
9.3	54	8.5	28.3		9.5		14.1	52.6		8.3	17	10.4	17.1	A	8.3		15.3	59.0	A	9.5		41.7	32.3	
9.3		29.4	10.1		8.3		14.2	12.9	A	9.5		20.0	6.4		8.0		19.7	22.2	M	9.6		42.6	44.2	
9.5		33.1	59.4		9.5		15.5	15.4		9.3		32.5	50.8		9.0		53.2	14.0		10		56.0	48.8	
8.5		43.8	35.5	M	9.0		29.2	20.0	A	9.2		42.0	5.9		9.4	27	9.4	35.3		9.6	37	4.5	5.2	
9.5	55	8.5	8.6		9.4		33.4	37.8		9.0		48.7	53.9		9.3		12.7	15.3		7.5		16.2	33.2	A
7.2		20.2	48.9	B	9.5		44.4	33.6		8.7		53.0	10.8	B	9.8		26.2	15.1		9.8		30.4	2.5	
9.1		42.5	35.0	M	9.8		53.8	9.7		9.3		53.1	31.2		9.3		37.3	33.8		9.8		47.0	18.4	
8.8		44.9	27.7		9.3	8	20.5	37.4		7.4		55.2	27.0	A	9.4		54.7	56.6		9.1		57.2	15.3	
9.5		46.0	46.9		9.3		27.7	22.4		9.5	18	3.1	46.9		9.1	28	1.3	10.4		9.2	38	0.1	34.9	
9.4	56	15.0	54.5		9.4		33.4	24.1		8.8		8.4	33.5	A	8.3		10.0	48.6	A	9.1		6.5	15.1	K
9.8		25.9	14.5		7.3		35.0	37.3	A	9.8		23.0	28.9		9.1		10.3	55.7		9.5		17.9	48.5	
8.7		28.6	0.8	K	8.8		53.1	57.7		9.5		27.8	48.5		9.4		12.7	4.4		9.5		25.1	38.3	
9.8		28.6	31.0		9.4		56.3	10.4		9.5		28.7	24.6		9.8		19.2	30.6		9.8		33.5	3.9	
9.3		29.2	23.8	M	9.1	9	8.9	36.7		9.0		30.6	47.7		9.4		22.4	27.0		9.1		48.2	29.7	
9.5		43.8	48.0		9.4		13.1	40.7		8.0		55.5	15.1	M	9.5		49.8	42.2		8.8	39	3.0	5.6	A
10	57	11.0	17.5		9.5		19.0	53.7		9.7		59.5	24.5		9.0	29	6.7	14.4		9.5		21.1	51.5	
8.8		15.6	30.2	M	9.3		44.8	16.5		8.8	19	4.2	31.5	A	6.8		13.2	38.5	A	9.5		21.2	27.6	
9.5		28.7	35.0		8.1	10	13.8	17.4	A	9.8		13.9	53.9		9.1		34.3	44.1		9.2		34.0	12.4	A
8.5		31.0	49.4	M	9.8		23.7	18.1		9.3		27.0	35.2		9.0		45.9	59.3	M	9.5		34.5	59.3	
9.2		39.2	31.7		9.0		53.8	17.7	A	9.1		44.8	35.7	A	9.5	30	12.7	43.4		var	40	3.7	18.8	
9.2	58	1.5	11.0		9.0	11	11.1	31.5	M	10	20	2.5	12.5		9.0		39.8	3.6	M	8.5		23.6	26.1	B
8.0		13.9	19.0	A	8.8		24.8	55.7		9.5		8.4	6.3		9.4		41.9	55.1		9.6		37.5	20.3	
9.1		50.6	29.9	M	9.8		24.9	12.2		9.2		22.5	15.9		9.0		46.7	47.5		9.4		55.7	43.8	
8.8	59	14.3	40.7	M	8.0		43.8	28.0	A	8.8		23.3	10.7		8.8		48.8	12.3	M	9.5		59.3	49.2	
9.4		52.4	52.0		9.8		55.5	47.5		9.5		23.7	54.2		9.5		51.1	8.6		9.0		59.6	1.1	M

5801—5860				5861—5920				5921—5980				5981—6040				6041—6100			
20h		—15°		20h—21h		—15°		21h		—15°		21h		—15°		21h		—15°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
8.7	41	4.4	25.8	A	9.3	52	28.8	15.8		9.5	5	35.8	44.0		9.8	18	18.8	22.9		9.4	34	20.2	17.6	
9.1		5.1	4.3	M	9.4	53	5.7	53.6		8.3		43.3	14.2	A	9.1		24.2	7.5	A	9.0		39.2	26.0	
9.0		14.6	46.5		9.1		27.2	55.0		8.5		45.3	54.4		7.8		26.9	52.0	B	8.8		46.9	59.4	
10		20.3	11.8		8.3		34.3	16.4	A	10		51.7	55.0		9.5		34.0	49.4		9.8	35	0.4	24.0	
10	42	6.0	25.1		9.2		40.4	27.5		9.8		55.8	44.1		9.5	19	17.1	38.8		9.3		7.8	31.6	
9.4		13.5	44.0		10	54	1.4	54.3		9.3	6	41.3	23.6		9.1		22.1	48.0		6.2		9.8	3.6	Sj
9.5		17.0	50.1		9.0		20.1	58.9		9.7		49.3	16.5		9.1		31.0	30.2	A	9.4		10.7	13.4	
9.5		19.4	45.8		10		27.8	9.5		9.0		50.2	23.4	R	10		48.0	41.1		9.1		28.8	48.0	M
8.8		33.8	20.3	A	9.5		37.6	9.7		7.5	7	8.3	43.5	L	9.8		59.2	59.4		10		33.9	36.3	
9.5		34.1	15.2		9.7		55.0	10.3		9.7		21.7	23.0		8.9	20	5.3	27.9	A	9.8		43.3	7.0	
9.5		38.3	29.7		9.3		59.1	45.0		0.0		22.8	19.0		9.6		13.2	2.8		9.8		58.6	36.5	
9.0		45.9	49.3		8.5	55	10.1	23.9	A	8.8		26.3	51.6	WC	8.8		51.7	27.5	A	6.5	36	5.1	24.5	A
8.9		55.5	36.7		9.8		18.9	21.7		9.4		26.3	19.9		9.5		52.6	51.9		9.4		8.8	46.7	
9.0	43	1.4	47.8		8.6		27.1	44.2		8.5		29.4	0.0	B	9.5		59.9	58.3		10	37	3.7	44.3	
9.5		3.5	54.1		9.1		36.8	49.6		5.0		42.3	46.0	B	8.3	21	57.8	47.4	A	9.5		20.3	38.5	
9.3		8.6	8.1		9.5	56	1.3	24.1		9.8		53.9	55.0		9.2	22	21.4	28.2		9.5		25.2	52.8	
9.5		25.9	46.9		10		5.3	24.6		9.3	8	24.4	54.4		8.7		33.3	4.0	A	9.5		25.2	47.6	
10		29.4	43.0		9.2		5.7	10.4		8.0		34.3	25.0	A	9.4	23	8.8	9.3		8.5		52.4	47.6	A
9.5		53.0	44.1		9.5		45.6	50.0		8.4		46.8	41.7	A	9.4		13.5	59.2		9.1		54.8	17.5	
9.4		59.1	7.0		9.8		51.1	23.0		9.1		52.0	4.9	A	9.6		17.4	51.6		9.0	38	13.4	54.2	
9.9	44	17.0	58.8		8.2		55.9	6.9	K	9.9	9	2.3	21.1		10		52.0	16.0		8.8		13.9	6.7	
9.4		38.1	32.3		9.4	57	3.4	52.5		9.5		30.5	28.4		9.4		54.9	51.1		9.8	39	9.9	37.4	
9.2		42.9	35.7		9.2		30.4	17.7		9.8		58.4	13.1		9.6	24	4.5	56.6		9.5		13.4	1.1	
9.3		46.2	2.1		7.4		34.5	28.8	A	9.4	10	21.4	53.9		9.1		25.8	50.9	A	8.5		14.9	21.4	A
9.3	45	28.0	58.2		9.4		52.7	33.6		9.1		51.5	42.7	A	8.8		43.1	6.6	R	7.7		15.9	11.0	A
9.7		45.8	8.2		9.3	58	9.5	21.8		9.8	11	7.3	53.8		9.0	25	3.8	57.3	M	9.2		29.5	53.3	
9.7		52.3	7.3		9.1		29.2	43.3		9.8		17.2	9.6		9.4		22.5	30.9		9.8		42.8	12.5	
9.8	46	10.2	1.4		9.4		35.7	58.1		9.7		30.6	43.7		9.2		55.8	32.9	R	9.4		42.9	33.7	
9.8		30.4	22.9		9.2		53.1	5.0		9.0		33.4	0.0		9.2		57.3	54.1		9.9		53.9	43.9	
9.5		35.7	9.8		9.4	59	20.1	51.0		9.4		39.5	16.7		9.8	26	4.2	39.9		10		54.2	46.1	
10		39.5	9.4		9.4		22.1	52.1		9.8	12	7.9	1.2		9.6		4.9	59.7		9.8	40	20.4	1.3	
9.8		41.0	30.5		9.5		26.5	59.3		9.8		42.1	14.6		8.5		36.5	16.3	A	8.3		39.1	56.1	K
7.5		50.9	50.0	A	9.2		26.8	14.2		9.8		43.3	40.4		9.8	27	16.4	29.8		9.5		56.5	42.8	
9.4		56.4	36.8		9.5		43.5	50.0		9.5		54.4	58.2		9.2		16.7	15.0	A	9.4	41	16.9	38.0	
8.5	47	26.2	9.4	R	10	0	2.7	26.9		9.5	13	6.0	0.1		10		48.5	2.5		7.5		17.7	47.4	K
9.5		29.7	13.7		9.0		17.2	55.2		9.8		16.6	15.9		9.8		51.5	11.7		9.3	42	10.0	23.7	
9.8		55.3	0.5		8.2		23.6	28.8	A	9.4		23.0	10.9		9.3		58.0	14.1		9.4		59.6	47.5	
8.3		55.5	51.2	A	9.8		51.3	3.2		8.0		28.5	45.9	B	10		58.6	18.1		8.8	43	14.0	28.8	
9.2		56.9	13.5		9.8	1	3.7	16.0		9.0		55.6	42.4	B	10	28	33.1	5.2		9.4		36.7	25.3	
9.5	48	24.7	34.5		9.5		44.6	26.1		var		58.9	46.7	B	10		44.8	27.5		9.2		38.4	12.1	
9.3		41.2	24.7		9.7	2	1.7	9.8		9.3	14	4.9	32.0		9.6		48.2	54.6		9.7		53.1	6.2	
9.0	49	11.4	30.0	M	10		29.6	34.0		9.8		7.5	12.0		10		50.6	58.3		9.8	44	8.3	57.0	
9.5		28.2	13.9		9.8		41.6	20.1		8.0		16.7	31.7	A	9.8		58.5	11.7		9.5		25.8	29.9	
10		39.8	42.2		9.8		47.6	3.6		10		30.4	46.7		10	29	45.3	28.4		9.8		28.2	25.4	
9.5		45.4	32.8		9.5		47.7	38.9		9.3		33.4	23.4		9.3	30	0.5	37.6		9.4		58.8	21.6	
8.3		59.0	42.7	A	10	3	33.2	45.4		9.5		42.3	40.5		10		13.1	5.1		9.8	45	21.6	55.3	
9.5	50	8.0	14.2		9.7		36.7	9.4		9.5		54.5	55.5	R	7.2		16.3	33.4	A	8.2		48.1	46.0	K
6.0		39.8	2.3	B	6.3		39.8	3.5	A	9.5		54.7	34.3		9.7	31	24.7	57.9		9.1		54.0	18.9	
9.5		41.3	59.1		9.7		43.5	40.4	A	9.8		55.6	14.7		9.6		36.1	15.5		9.8	46	14.7	7.3	
9.8		46.9	3.6		8.2		53.7	32.8	A	9.5		56.0	31.0		9.1	32	9.2	38.4		8.8		49.1	16.3	
9.5	51	9.2	52.4		7.8	4	6.1	8.7	A	9.1		57.4	0.7		9.6		15.0	54.9		10		55.5	3.9	
8.8		26.3	21.6	A	10		15.9	7.4		8.8	15	11.0	26.6	A	10		21.1	27.2		7.0	47	5.3	56.3	A
9.4		32.4	27.7		7.5		20.3	35.3	A	9.5		24.8	27.3		8.5		40.1	2.4	Sj	9.8		6.9	19.0	
9.4	52	0.0	1.1		9.5		22.8	16.5		8.9		33.9	39.3	A	9.1		48.1	21.4	K	9.8	48	14.1	46.2	
9.4		3.8	22.3		10		28.4	59.6		9.5		36.3	28.8		9.4	33	17.6	38.9		9.5		31.3	49.9	
9.2		4.2	26.8	B	9.6		42.7	47.0		9.7	16	3.8	33.4		10		30.2	5.3		9.5		38.0	43.9	
9.7		5.7	19.6		9.8		56.7	22.5		9.1		7.3	55.9	K	7.2		31.7	29.8	B	10		39.8	4.7	
8.3		10.0	40.5	K	9.8	5	22.8	39.5		9.8		31.0	57.0		9.1		53.5	45.2		9.8		48.8	58.8	
8.8		13.9	2.2	K	9.5		23.5	50.9		9.8		54.6	12.0		9.8	34	2.9	57.7		9.8		49.4	16.3	
9.8		26.3	1.9		9.8		26.2	41.5		9.5	18	6.9	47.6		9.0		11.3	16.8	Sj	9.1	49	4.4	5.7	

5864: 35:38 16′39″.4 B_1, Ep. 1883.65

6101—6160				6161—6220				6221—6280				6281—6340				6341—6400			
	21h—22h	−15°			22h	−15°			22h	−15°			22h	−15°			22h—23h	−15°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.6	49 5.7	48.3		9.7	4 29.6	41.2		8.0	18 12.2	40.9	A	9.2	42 31.0	13.5		8.5	57 54.1	50.0	A
9.4	40.2	15.7		9.1	35.0	25.4		9.4	29.8	59.0		8.6	51.6	30.1	A	8.5	56.6	10.7	Sj
6.8	53.9	48.8	A	9.6	59.1	41.7		9.5	19 3.2	39.9		9.3	43 20.3	31.3		8.0	58 18.2	13.4	A
8.6	50 18.3	46.8	A	9.1	5 7.6	23.2		9.5	9.3	21.3		9.8	46.4	5.7		9.3	21.0	42.2	
9.1	21.0	59.0		9.5	34.3	56.6		9.4	9.4	30.7		8.8	44 1.4	58.6	R	9.3	21.6	47.1	
9.3	29.8	16.0		9.5	37.8	43.5		9.6	12.2	43.1		9.0	23.6	12.1	A	8.9	58.9	39.0	WZ
8.8	55.3	48.8	R	9.2	6 1.6	35.1		9.8	20 14.1	33.3		9.8	32.6	29.0		9.0	59 0.0	23.5	
9.8	51 8.8	10.4		9.0	1.7	39.2	M	9.0	37.3	35.5	M	9.4	59.0	11.6		9.0	5.5	44.8	
8.9	14.9	49.7	A	7.3	47.3	48.7	B	9.5	21 40.8	57.9		9.4	45 12.3	42.2		9.9	17.5	4.5	
8.2	17.7	12.2	K	9.4	7 1.7	36.8		8.8	22 1.4	33.5		9.5	27.5	0.7		9.4	52.9	24.9	
8.2	25.1	46.2	A	9.3	4.8	26.0		6.8	31.2	18.9	A	9.9	51.9	54.0		9.5	0 6.9	32.8	
9.3	25.2	29.1		9.8	20.3	42.2		9.0	36.0	31.2		9.2	46 16.8	37.3		9.4	8.7	28.1	
9.8	37.1	35.2		9.6	45.8	43.5		9.0	52.3	53.3		9.8	22.4	47.4		10	24.1	10.0	
9.5	44.2	56.8		8.0	8 12.4	9.1	A	8.0	23 11.2	18.2	A	8.2	43.4	47.1	M	10	55.7	34.4	
9.5	52 12.6	48.6		9.1	19.1	3.5	A	9.1	14.4	52.3	A	8.5	49.0	35.5		8.3	59.7	49.4	A
9.6	25.5	29.6		9.5	35.2	16.7		9.8	21.9	49.7		10	47 15.9	30.7		10	1 9.5	41.2	
9.6	28.4	20.9		9.8	50.2	27.8		9.8	22.2	58.2		9.4	26.1	11.3		9.5	27.6	7.3	
9.7	53 2.6	46.2		8.3	55.8	41.0	WZ	9.8	24 7.6	0.1		9.0	28.1	45.7	M	9.2	30.2	8.6	
7.9	35.2	1.4	A	8.8	9 6.3	53.7		9.8	9.0	34.8		9.5	29.0	48.4		9.1	56.2	46.4	
9.6	57.7	0.8		7.2	7.1	22.6		8.8	46.9	39.4	A	9.7	31.8	42.3		6.5	2 10.8	17.7	B
8.9	54 17.2	40.0	WZ	9.9	32.7	11.6		9.2	52.4	45.2	A	9.4	32.1	48.6		8.9	14.7	49.6	A
10	22.1	52.1		10	33.0	21.6		9.3	26 28.3	18.6		9.4	45.1	8.0		9.2	34.8	35.8	
10	23.2	8.2		9.4	47.4	43.2		8.5	41.5	51.8	A	9.0	48 20.3	26.1		9.4	56.4	19.9	
9.8	25.2	42.1		9.5	10 1.6	29.7		9.4	45.1	25.9		9.4	40.7	10.4		9.9	3 26.5	29.2	
8.5	26.4	2.4	A	8.5	17.8	13.5	A	9.1	49.3	53.0	A	8.0	49.1	45.2	A	8.4	37.3	58.0	M
9.4	44.4	33.3		9.8	26.2	56.4		9.4	27 2.3	10.2		9.0	49 34.6	35.8		9.3	43.2	10.0	
9.6	54.1	32.0		9.6	35.0	48.7		9.4	28 33.3	26.3		9.3	48.6	26.6		9.3	4 17.2	2.7	
9.4	55 30.9	23.7		8.5	40.1	44.1	B	8.9	29 13.6	5.5	R	8.7	50 3.3	13.4	A	10	35.4	1.8	
8.1	31.0	38.9	B	9.0	46.3	21.5	A	9.0	16.1	22.7		9.1	12.3	25.8		9.0	5 11.3	47.6	M
9.5	43.2	39.5		9.4	11 9.7	8.0		9.1	30.7	43.6	M	8.5	14.7	4.1	Sj	9.6	25.4	24.1	
10	47.4	53.9		9.8	13.2	26.6		9.3	30 12.4	13.8		10	30.9	46.8		9.6	58.8	43.7	
10	56 36.7	54.1		9.0	50.4	2.2		9.1	23.3	58.7	A	9.9	51 18.8	11.5		9.4	6 12.9	10.8	
7.5	36.8	8.7	B	9.5	12 6.2	7.7		9.8	47.9	30.0		9.3	33.9	16.2		9.7	28.4	10.3	
10	57 16.3	22.5		9.8	6.5	44.8		9.3	31 0.1	34.4		8.3	53.2	0.5	K	8.3	7 5.6	14.2	B
9.5	30.7	56.2		8.6	20.3	29.8		9.3	28.8	47.4		8.8	52 7.3	2.1	Sj	9.9	20.7	48.0	
9.7	31.4	4.8		8.5	42.0	16.9	B	9.5	33.7	22.0		9.5	30.2	38.4		8.8	22.6	56.0	
9.1	52.3	34.8	A	8.0	13 11.9	38.8	A	7.8	32 11.2	17.3	A	9.9	39.3	1.0		9.6	22.8	49.5	
9.4	58 7.5	20.9		8.7	28.5	42.1	A	8.3	36.9	21.7	A	9.3	47.8	34.3		10	41.4	54.5	
6.8	19.8	35.6	A	10	44.8	25.0		9.4	54.3	39.1		10	52.9	2.2		9.5	47.0	15.0	
9.4	39.3	7.7		8.0	44.9	11.1	B	10	33 42.4	40.7		9.0	58.5	13.1	A	8.5	53.1	20.0	A
9.1	50.1	26.3		9.5	49.4	37.2		9.4	35 22.1	2.7		8.2	53 6.8	1.9	B	9.9	8 30.9	53.4	
9.7	59 43.1	29.2		9.0	14 20.4	35.8	A	9.4	26.0	43.5		9.8	22.4	59.9		9.8	38.4	55.6	
7.0	44.9	11.7	A	9.4	28.7	19.8		9.1	26.3	3.5		9.8	37.3	45.9		8.9	55.6	17.1	A
9.8	0 22.2	10.4		9.5	45.1	13.5		7.5	36 34.2	22.0	A	10	44.4	10.6		9.7	9 4.0	30.1	
9.4	28.1	59.2		9.6	15 0.1	46.9		7.0	37.7	25.9	A	7.5	45.8	3.0	A	9.4	6.2	31.8	
9.8	30.1	5.1		9.5	2.4	12.2		9.3	41.7	28.1		9.0	47.4	59.1		9.6	25.8	37.2	
9.6	31.1	57.7		9.3	5.0	48.0		10	37 2.4	36.1		9.3	54 3.2	39.2		9.8	10 12.1	33.7	
9.8	37.4	14.4		7.0	33.3	40.2	A	10	11.3	39.8		9.2	16.6	24.4		9.8	18.5	56.0	
9.6	38.5	19.1		9.0	56.4	2.5	K	9.1	14.3	34.1		9.4	23.8	47.6		9.7	20.0	4.4	
8.7	50.0	21.2	A	9.5	16 9.9	12.8		9.5	23.2	16.0		8.0	29.8	44.9	B	9.1	30.5	53.6	
8.7	1 51.9	16.6	K	9.0	16.2	51.5		9.8	38 4.3	15.2		9.1	51.6	38.4		8.6	42.0	51.6	A
8.7	57.0	49.8	A	9.3	19.1	38.4		8.9	21.5	17.9		8.2	55 4.9	2.3	B	9.7	49.7	16.2	
10	2 6.7	48.9		9.4	36.8	43.2		9.5	39 19.1	48.3		9.8	13.8	31.2		9.5	11 30.6	36.2	
9.4	7.2	39.3		9.2	36.9	59.7		8.3	49.2	53.5	A	9.4	15.0	6.9		8.5	33.5	2.3	A
9.3	18.0	40.7		9.4	17 4.5	19.4		9.4	40 11.6	40.6		8.5	22.4	53.5	B	9.0	53.5	34.8	
9.0	22.0	42.3	A	9.5	11.5	30.0		9.7	23.6	15.8		9.8	33.5	26.3		10	12 4.9	58.7	
9.9	3 12.9	33.5		9.5	18.0	31.1		9.5	57.5	50.6		9.5	56 44.0	26.4		9.4	5.6	38.6	
9.1	23.7	32.6		9.8	31.9	11.0		9.4	41 10.4	11.6		9.7	47.7	36.9		10	16.0	33.8	
9.8	39.3	8.3		9.7	43.5	54.0		10	36.3	54.9		8.7	57 7.2	22.4	WZ	9.7	33.7	39.1	
9.8	57.4	15.4		9.7	45.0	24.5		9.4	56.2	48.0		9.8	53.7	46.9		8.0	44.2	11.3	A

6145: 27:39 59′12″0 B_2, Ep. 1882.81 6321: 6:89 2′3″1 B_4, Ep. 1872.74

6401—6430				6431—6460				6461—6490				6491—6520				6521—6545			
23h		−15°		23h		−15°		23h		−15°		23h		−15°		23h		−15°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	12 53.1	6.6		9.9	20 42.1	34.7		9.8	29 45.8	56.4		7.8	38 22.4	33.6	M	8.5	48 2.4	39.2	WZ
9.8	58.6	28.2		9.1	21 17.0	55.7		8.5	53.4	1.3		9.4	23.7	10.0		9.3	4.3	24.7	
10	13 25.0	43.2		8.6	23.1	6.5	M	9.6	30 11.8	31.9		9.8	25.9	26.0		9.1	49 5.7	33.8	
9.2	14 17.0	30.1		9.0	24.4	20.6	A	6.5	30.3	53.3	A	8.3	32.7	56.2	B	8.8	50 31.0	29.3	
10	57.7	58.9		9.5	26.9	10.7		8.5	50.5	24.9		9.0	41.2	17.8		10	51 22.2	58.0	
5.3	15 2.7	49.7	A	9.6	30.8	33.5		9.9	31 7.2	37.2		9.5	39 0.7	57.1		9.5	52 16.1	8.2	
9.5	14.6	47.2		9.7	51.3	35.0		9.3	46.2	26.9		9.1	55.3	21.7	WZ	9.0	35.0	37.3	
9.0	21.8	58.4		9.8	53.5	6.9		9.7	59.1	6.7		9.5	40 38.3	23.6		8.5	56.8	17.8	A
9.4	29.2	47.2		9.7	22 2.5	27.4		9.7	32 0.6	58.7		10	41 0.8	57.8		9.1	54 30.7	47.1	
10	34.6	29.4		9.3	23 3.0	53.6		9.7	0.9	56.9		8.6	6.3	39.6		9.5	37.9	59.9	
9.1	16 2.9	16.2	M	9.8	6.4	45.6		5.3	14.7	1.3	B	8.8	43.1	43.5	A	8.4	41.7	29.5	B
8.5	5.3	17.1	A	9.4	21.5	42.0		9.3	33 19.5	57.0		9.0	42 11.9	35.1	A	8.3	55 22.3	50.8	A
9.0	38.7	42.5		8.3	54.2	29.9	A	10	22.3	37.2		8.4	28.3	8.7	M	9.6	56 11.2	40.6	
9.5	17 6.7	2.4		7.9	24 12.0	36.4	A	9.5	38.1	21.9		9.5	39.8	6.0		9.0	39.9	54.8	
9.8	44.7	40.9		9.7	21.7	33.0		9.0	34 23.9	48.0		7.3	58.4	23.1	P	9.5	41.5	59.0	
9.4	18 19.3	9.6	M	7.8	22.0	44.2	A	4.8	35 12.5	20.6	L	7.5	59.0	47.1	A	9.1	48.8	43.6	
9.3	20.5	0.4		9.3	34.7	19.5		8.7	25.2	23.0	M	6.0	43 4.8	12.3	L	9.0	57 55.4	52.0	
9.5	41.9	58.2		9.4	41.5	34.8		9.7	39.4	28.3		9.1	7.4	16.8		9.5	58 0.5	24.6	
8.8	43.5	30.6	A	9.4	25 0.1	53.8		9.3	44.3	52.9		9.5	38.4	49.6		7.3	1.4	13.7	B
9.4	57.4	34.5		9.3	15.7	56.2		9.0	46.9	23.6		9.5	44 8.3	15.4		9.4	3.6	26.9	
9.3	59.5	18.6		8.9	37.6	46.8	A	9.4	36 0.1	17.7		9.1	12.2	38.2		8.8	18.9	44.9	
10	19 6.8	48.1		9.1	26 2.0	0.4		10	12.4	29.9		10	45.0	11.1		9.0	29.9	14.3	
8.9	23.7	25.3		9.5	12.7	57.4		10	49.6	13.8		9.6	47.9	54.2		9.5	36.2	57.4	
9.5	23.9	47.0		9.0	29.6	50.4		9.5	50.1	30.4		9.6	50.8	5.1		9.3	45.7	2.5	
9.0	39.7	37.5	A	8.0	34.5	1.3	R	9.0	53.5	46.7	A	6.2	45 3.5	3.4	L	9.5	59 46.4	42.1	
9.5	43.4	58.9		9.8	38.1	56.5		9.1	57.3	27.5		9.8	14.7	32.1					
9.1	57.6	18.3		9.2	27 39.7	6.2		8.1	59.1	13.6	B	9.5	20.3	25.8					
9.5	20 3.3	8.7		9.4	44.8	35.9		9.6	37 19.4	30.4		9.2	41.0	25.2					
9.2	30.5	11.8		9.1	29 5.4	30.5		9.7	20.5	39.3		9.5	46 26.8	3.6					
9.7	41.5	22.3		9.6	20.7	46.8		10	38.3	31.0		9.5	47 59.6	23.3					

Zone −16°

1−40				41−80				81−120				121−160				161−200			
	0h		−16°		0h		−16°		0h		−16°		0h		−16°		0h−1h		−16°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
10	0	16.4	2.0	9.1	9	46.2	28.1	8.0	23	6.3	43.0	A	9.5	35	46.2	35.2	7.8	50	30.4	34.0	B
9.0		26.2	8.2	10		50.9	34.3	9.0		25.2	32.5		9.2		58.0	51.2	A	7.3		57.3	27.8	B
10		32.6	1.6	9.5	10	57.8	10.8	9.3		59.2	16.7		9.4	36	7.3	31.3		9.2	51	1.7	15.0	
9.6		34.2	8.0	10	11	26.8	51.1	9.9	24	6.2	24.6		9.6		47.5	20.9		9.8	52	13.9	17.3	
9.5		42.7	49.7	8.8		36.9	47.8	WZ	9.1		23.0	35.5	A	9.5	37	2.8	32.8		10	53	7.3	1.4	
8.9		46.3	30.0	A	9.8		57.3	57.7	10		55.7	6.4		8.8		26.4	11.0	A	9.7	54	33.8	5.0	
9.5		53.9	46.5		9.2	12	21.2	2.4	10	25	19.8	33.1		10	38	3.3	32.7		9.7		36.9	35.7	
9.5	1	24.2	15.5		9.0		31.4	29.6	10		38.3	29.5		9.2		37.6	26.6		10		49.3	2.1	
10		36.2	14.1		8.3		57.3	22.1	B	9.2		56.0	46.3		9.4		46.7	7.6		9.7	55	15.4	5.7	
10	2	0.3	21.2		10	13	23.0	48.0		9.8	26	20.2	17.5		8.8	39	35.5	46.7	A	8.5		17.8	55.3	B
9.0		9.9	31.3		8.4		23.8	27.8	A	10		21.3	12.6		9.2		36.2	34.3		8.5	56	10.7	13.4	A
9.0		12.7	6.7		8.7		39.5	55.4		9.3		25.0	20.7		9.0		49.2	10.2	A	9.9		17.0	38.2	
9.6		25.4	37.8		10	14	3.9	25.0		9.5		26.6	36.2		10	40	2.4	28.9		9.2		43.3	10.4	
10		49.5	48.7		10		13.5	38.5		9.8		39.0	52.5		9.6		2.9	4.4		9.3	57	9.6	49.2	
9.0	3	31.1	0.8		9.8		15.9	29.5		9.3		50.0	39.8	A	10		7.6	10.6		10	58	4.0	32.8	
10		34.7	9.5		9.4		32.7	2.8		9.5	27	2.9	46.4		10	41	2.1	59.7		10		4.8	5.8	
5.2		52.5	15.7	L	8.8	15	37.5	40.6	A	10	28	5.2	36.5		8.5	42	24.0	11.0	A	7.0	59	33.8	16.8	A
9.5	4	17.0	44.2		6.7		42.6	44.6	A	8.9		6.6	53.2	WZ	10		32.0	20.5		10		36.4	32.0	
9.8		38.6	48.4		9.5		45.9	28.3		9.8		8.4	27.5		8.7		43.8	57.6	A	9.5		51.3	48.7	
8.6		43.1	38.8	WZ	9.5	16	22.9	33.8		9.9		24.4	28.0		9.3		55.7	40.8		9.8		56.3	57.8	
9.2		46.8	0.1		8.5	17	17.4	32.9		9.0		35.3	46.3	A	9.7		57.8	14.1		9.4	0	11.7	58.5	
10		59.3	2.1		9.8		30.4	5.9		8.8		39.1	16.1	A	8.0	43	2.9	40.3	B	9.3		24.0	58.3	A
9.0	5	5.9	22.9		8.2		33.6	50.1	A	9.5	29	19.6	53.7		10		20.7	58.5		8.6		32.8	43.3	A
9.3		22.3	1.8		9.0		44.1	15.0	A	9.8		24.7	59.3		9.0		48.7	55.7	WZ	9.8		40.8	30.5	
9.0		37.4	19.7		8.7	18	10.3	55.9	A	8.7	30	16.1	37.3	A	9.9	44	28.5	3.7		9.1		54.5	50.7	A
10		47.5	20.4		9.8		13.7	18.5		9.1		21.5	19.2		9.1		48.5	19.2		10	1	4.1	25.3	
9.8		58.6	48.4		9.0		17.5	35.8	A	10	31	12.4	26.7		9.8		49.6	56.4		9.2		45.0	24.6	
8.9		59.4	17.7		9.0		46.0	30.0	A	10		25.0	54.8		8.3		56.0	7.2		9.4	2	17.9	49.2	A
9.1	6	12.0	30.8	A	9.7	19	14.9	12.5		8.5		26.0	27.8	A	10	45	36.1	26.7		9.2		48.3	13.9	A
9.4		19.2	48.0		9.2		23.0	23.9		10	32	35.6	24.1		10	46	4.0	14.7		9.2	3	25.9	40.4	
9.5		30.9	41.1		9.3		34.5	4.7		9.6		49.8	55.7		9.0		27.2	26.3		8.3		51.7	28.5	
9.3		37.5	52.7		9.8		35.8	39.3		9.2		57.1	32.7		8.0		53.2	57.6	A	9.5	4	12.7	9.4	
9.5	7	2.6	22.8		9.4		58.6	35.3		9.5	33	0.5	9.5		8.9	47	22.7	14.4		9.4		29.8	4.2	
9.0		22.6	41.8		9.4	20	6.1	20.4		9.1		7.6	3.5		9.5	48	59.0	29.1		9.8		36.1	20.4	
9.4		23.4	2.2		8.5		15.4	15.3		8.9		23.9	7.4		9.4	49	2.6	9.1		8.8		44.0	50.0	WZ
9.6		35.1	56.3		10	21	14.8	48.2		9.5	34	7.3	50.8		10		19.7	12.7		8.6		53.9	27.9	
8.3		37.7	51.8	A	9.5	22	6.1	28.0		9.0		51.9	9.4		9.8		23.0	51.1		9.3		56.5	49.3	
9.1	8	4.6	25.5		9.5		31.6	16.2		9.6	35	9.5	22.3		9.2		30.4	34.1		9.5	5	39.0	40.5	
10		42.1	21.9		10		48.2	30.4		8.7		31.6	55.6	A	8.3	50	4.6	47.7	A	9.1	6	35.3	24.1	A
8.9	9	30.8	16.6		9.8	23	2.2	35.6		9.1		41.7	50.8	A	9.2		23.1	55.4		8.0		38.8	6.2	A

201—260

	1h		−16°	
m	m	s	′	
9.0	7	4.2	54.5	WZ
10		21.2	16.7	
9.7		27.1	51.5	
9.8		30.7	3.1	
9.9		42.8	21.6	
7.0		44.4	34.8	A
10	8	38.7	48.8	
9.3		49.0	20.6	
9.3		57.6	41.4	
9.8	9	11.8	10.0	
10		32.2	12.5	
10		48.7	52.3	
8.6	10	9.9	23.5	
9.0		23.6	15.2	
9.2		30.7	34.3	A
9.6	11	4.3	44.3	
9.8		40.4	54.4	
9.2	12	4.5	15.3	
10		19.6	9.1	
9.8		21.0	21.3	
9.5		24.6	28.5	
9.1		42.7	12.6	
6.3		50.2	34.3	B
9.0	13	30.2	57.0	
9.2	14	0.5	22.5	
8.6		10.1	6.7	A
10		51.7	35.7	
10		53.3	45.2	
9.6	15	0.2	16.3	
9.4	16	18.5	1.1	
9.1		20.2	27.0	
8.1		27.0	59.3	A
9.5		36.5	29.6	
10		53.8	59.0	
9.5	17	17.6	47.1	
10		19.5	44.0	
6.0		33.2	24.8	A
10		34.7	0.9	
10		46.0	19.7	
9.8	18	10.5	0.0	
9.5	19	6.5	38.7	
9.5		32.6	51.9	
10		47.8	26.1	
10	20	54.5	41.1	
9.0		59.2	57.1	
9.5	21	13.4	11.8	
8.3		19.1	39.0	A
8.8		53.6	37.7	A
10	22	8.4	46.0	
8.0		25.3	52.7	WZ
10		26.7	45.8	
9.5		44.0	5.7	
7.5		53.0	28.6	A
9.5	23	24.5	12.7	
9.8		40.3	6.5	
9.5	24	1.9	53.5	
9.3		55.4	49.0	
10	25	7.8	46.3	
8.2		26.4	11.7	A
7.8		33.7	53.5	WZ

261—320

	1h		−16°	
m	m	s	′	
9.9	26	25.0	17.8	
9.1	27	8.1	55.5	A
9.3		17.5	1.2	
9.5		32.3	36.8	
5.8		32.6	25.0	A
9.2	28	4.8	54.8	A
9.6		20.2	7.5	
9.3		25.2	45.5	
9.3		43.8	31.4	
5.8		53.9	8.3	A
9.4	29	0.9	9.7	
9.2		3.7	25.3	A
8.2		17.0	45.5	A
9.7		59.1	50.8	
8.7	30	1.1	15.7	A
9.8		4.0	43.7	
8.9		4.8	19.7	A
8.0		24.5	44.1	B
7.3	31	21.9	36.8	A
8.0		22.8	11.9	A
9.5		38.7	7.0	
10	32	4.6	30.1	
8.5		14.5	43.6	A
10		32.3	12.0	
9.7		48.7	43.8	
9.2	33	27.2	51.0	
9.7	34	13.3	58.8	
9.7		23.3	20.6	
9.5		27.5	37.0	
9.5	35	12.7	43.1	
9.5		38.6	29.2	
9.1	36	3.1	27.6	
9.5		46.5	9.4	
9.9		52.8	28.1	
3	37	16.2	41.8	A
10		31.2	1.5	
9.5		37.9	47.5	
9.5		40.7	26.4	
9.5		50.6	25.0	
9.5		53.6	24.2	
8.2	38	12.8	37.0	A
9.7		30.0	48.2	
9.1	39	17.4	3.0	
10		25.7	26.2	
9.8	40	41.4	34.0	
9.4		57.7	3.3	
9.4	41	27.1	16.0	
8.9		43.7	12.2	
8.8		55.2	9.0	
8.5	42	3.7	17.9	A
9.4		14.0	18.2	
9.0		23.3	22.6	
9.4		25.7	55.7	
8.5	43	0.4	29.7	A
10		9.1	26.1	
9.1		25.3	50.3	B
8.7		27.2	54.9	A
9.5	44	22.7	17.0	
8.8		23.9	38.5	A
9.0		27.3	10.6	A

321—380

	1h—2h		−16°	
m	m	s	′	
9.8	44	44.9	30.4	
6.9		45.6	21.9	A
9.8	45	26.8	40.9	
9.9		31.6	41.0	
9.6	46	21.5	49.0	
10		30.6	37.5	
8.7	47	1.6	42.2	B
9.0		19.4	26.1	A
9.3		22.3	26.1	A
9.3		47.4	13.1	
8.3	48	9.6	2.6	A
8.8		14.4	14.9	A
9.9		23.2	40.9	
9.5		30.1	37.4	
9.8		37.3	18.7	
9.6		38.7	4.0	
9.0	49	12.0	28.8	A
9.3		52.9	5.2	
9.1	50	14.8	38.0	
7.8		47.4	50.2	A
8.6	51	29.3	7.5	A
9.1	52	42.3	2.3	A
9.5		48.5	18.7	
9.3		56.1	15.2	
9.8	53	50.0	50.5	
9.6		58.6	21.6	
9.9	54	2.1	22.7	
10		23.6	51.5	
9.9		25.3	2.7	
9.5		34.7	55.0	
9.5		39.5	52.3	
9.2		40.6	55.7	A
9.7		52.7	17.0	
9.6	55	18.4	41.1	
8.5		33.9	18.8	A
6.2		59.6	1.2	WZ
9.7	56	31.7	51.3	
8.7		36.0	10.8	
9.1		39.0	41.0	A
9.4	57	29.5	38.0	
9.8		33.8	39.1	
7.5		34.0	54.7	B
9.4		38.7	25.6	
8.5		43.7	59.3	B
7.8	58	1.8	22.2	A
9.4		36.2	18.3	A
9.4		44.1	28.0	A
9.6		58.6	41.0	
9.4	59	20.3	58.2	
7.0		22.1	8.3	A
9.1		24.3	56.1	
9.4		34.7	53.7	
8.9		46.5	1.5	A
7.8		59.5	24.0	A
9.6	0	11.1	15.7	
8.5		48.9	2.2	A
9.8	1	3.2	19.6	
9.2		3.5	0.4	
8.0		59.2	42.2	A
9.8	2	32.1	59.1	

381—440

	2h		−16°	
m	m	s	′	
9.8	2	33.4	36.4	
7.5		40.6	48.7	A
9.5	3	2.7	47.1	
9.2		3.2	32.4	
9.6		10.6	46.3	
9.3		36.6	48.4	
10		37.3	40.0	
9.2		57.2	2.8	
8.2		59.9	0.0	A
10	4	7.9	35.2	
9.9		10.0	39.0	
10		26.7	52.9	
10		42.2	47.4	
9.4	5	3.8	58.0	
9.5		26.1	11.5	
9.6	6	28.8	21.4	
9.3	7	2.4	19.8	
8.5		3.1	39.9	B
9.4		21.9	25.7	
9.8		27.7	40.1	
10		27.9	49.0	
9.8	8	12.6	39.8	
9.5		13.3	35.9	
9.3		19.7	54.0	
9.8		26.9	26.7	
8.9		27.2	44.5	A
8.0		33.1	38.7	B
9.1		48.2	40.7	A
8.5		55.0	33.5	A
9.3		56.5	0.8	
9.8	9	13.9	25.6	
9.4		36.7	14.6	
9.8		38.5	45.1	
8.3		48.0	57.1	A
8.8	10	2.4	59.8	A
8.6		2.9	36.7	A
9.0		7.3	9.2	
9.9		9.8	15.2	
9.8		30.4	18.1	
9.8		31.9	35.5	
8.5	11	5.6	34.7	A
9.1		10.4	11.8	A
9.5		52.7	17.2	
10	12	4.2	30.0	
9.6		23.8	16.1	
9.5		42.3	38.0	
9.9		50.0	20.0	
10	13	40.0	17.1	
9.6		44.6	54.3	
9.6	14	4.5	49.1	
9.9		8.4	45.5	
8.0		44.3	26.0	
9.5	15	49.1	53.8	
9.5		50.4	44.6	
9.0	16	4.6	12.1	A
9.5		42.2	24.2	
9.1	17	3.4	31.8	A
6.4		17.1	54.9	A
10		23.8	55.0	
9.6	18	23.9	22.2	

441—500

	2h		−16°	
m	m	s	′	
9.6	18	25.2	47.3	
9.5	19	22.8	51.3	
9.5		45.4	22.0	
9.4	20	10.3	6.7	
9.8		55.1	41.2	
9.8	21	23.3	50.6	
9.8		27.4	20.9	
9.0	22	3.8	33.1	
10		20.2	2.6	
8.6		40.7	42.7	A
9.5	23	9.1	14.4	
8.6		28.4	53.1	B
9.4		48.0	22.6	
9.0		55.9	48.5	B
9.0	24	42.8	21.7	
9.5		46.0	2.5	
9.0	25	29.5	10.7	
9.1		35.7	33.0	
9.4		50.5	55.6	
8.3	26	12.8	41.1	A
8.0	27	11.4	46.2	A
9.1		29.2	45.5	
10		45.5	46.7	
9.6		46.7	25.6	
8.5	28	12.7	13.5	B
9.0		28.8	33.0	A
9.0	29	2.0	46.4	A
9.3		16.2	22.4	
10		21.9	42.7	
8.7	30	42.6	49.7	A
9.4		50.1	18.5	
9.8	31	14.6	7.5	
9.5		40.4	55.2	
9.8		42.2	33.8	
9.2		53.9	55.0	
9.4	32	17.5	22.0	
9.8		27.1	17.3	
9.4		30.4	17.3	
9.2		38.8	25.7	
9.0		43.6	49.1	
9.2		46.0	20.4	
9.6	33	0.2	53.7	
8.0		10.5	43.4	B
6.9		11.2	56.2	B
9.4		18.6	7.0	
9.8		33.1	31.6	
9.1		47.6	56.1	
9.4		54.8	45.0	
9.0	34	33.8	7.3	
9.0		44.0	40.9	
9.1	35	3.7	47.4	
7.5		28.5	38.2	A
9.4	36	53.5	32.7	
9.8	37	6.9	58.9	
8.3		8.9	24.3	A
9.4		27.3	6.5	
9.0		45.9	58.3	A
7.3	38	21.8	1.7	A
9.7		34.8	12.6	
9.8	39	0.2	56.3	

501—560				561—620				621—680				681—740				741—800			
	2h		−16°		2h—3h		−16°		3h		−16°		3h		−16°		3h—4h		−16°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.5	39	22.8	46.7	7.8	59	41.4	46.2	A	8.8	15	11.4	54.8		8.8	33	21.9	46.6	B	8.5	50	31.8	31.3	B
8.3	40	27.1	35.0	9.1		59.9	52.9		9.5		27.0	25.0		9.5		22.4	23.0		9.7		54.9	36.0	
9.5		32.8	12.0	9.2	0	0.8	38.6		9.5		31.0	26.7		9.0		54.3	29.7		9.9		55.8	27.9	
9.8	41	5.5	39.8	9.2		5.4	10.8		9.1		34.3	15.8		9.8		56.8	15.8		9.1	51	24.0	18.8	
9.5	42	5.5	56.9	9.5		8.7	0.9		9.0		49.0	30.6		9.4	34	4.2	22.1		8.5		29.9	39.3	A
10		10.4	42.2	8.8		20.0	53.7		9.9	16	12.9	0.6		9.0		21.8	46.3	B	9.2		42.5	42.0	
9.8		28.7	49.9	9.4		23.0	18.0		10		37.8	11.0		8.5		47.3	46.7	A	9.1		47.2	15.6	
9.4		31.9	9.0	9.5		24.1	22.4		8.3		47.4	47.3	A	7.3	35	33.9	25.8	A	9.4	52	25.1	51.2	
9.0		31.9	44.6	9.9		40.9	47.2		9.2	17	22.3	20.8		8.5	36	13.7	32.6	A	10		39.8	23.8	
8.5	43	53.3	42.9	A	9.8	1	28.8	18.7		6.7		39.3	10.1	B	9.3		17.1	59.2		9.2	53	4.0	36.9	
10	44	1.2	29.3		10		39.4	30.9		9.1		56.4	44.0		9.5		49.9	52.5		10		28.3	59.4	
10		2.4	48.1		9.0	2	11.2	35.1	A	9.5		57.7	50.3		8.8	37	14.0	54.3		9.0		37.2	1.2	
8.8		10.7	5.9	A	9.2		25.5	14.3	A	9.2	19	28.4	9.7		9.8		29.6	32.4		10		53.9	24.6	
9.6		15.9	46.0		8.5		33.8	34.3	A	9.6		41.9	6.9		9.0		46.2	30.9	A	9.9	54	13.7	52.9	
9.8		23.0	4.7		9.3		54.4	4.4		9.0		51.2	17.1		10	38	30.4	9.6		8.3		34.8	16.5	A
9.5		26.8	59.6		9.4		55.2	5.2		8.9		51.9	32.0		8.5		33.9	52.7	B	9.6		40.9	28.8	
9.4		40.9	2.1	A	9.8	3	17.3	1.9		10		52.0	52.6		9.0		39.2	56.9	A	9.0		51.4	14.1	A
9.4		46.7	32.4		9.1		20.5	14.3		9.0		53.4	44.0		9.5		49.6	24.8		9.1		56.7	0.5	
10		48.0	18.1		9.8		21.2	26.5		10	20	51.2	32.9		9.1	39	41.9	49.5		10	55	12.2	15.0	
9.4	45	7.6	25.0		8.8		37.1	51.4		9.8	21	15.3	8.2		9.6		49.8	58.1		9.3		16.9	28.1	A
10		49.1	17.4		8.9		40.3	14.2		9.3		58.2	34.4		9.5	40	10.1	29.8		9.8		27.5	40.0	
10	46	0.2	30.6		9.4		47.3	31.8		8.9		58.3	41.8	A	9.6		10.8	27.2		9.5		29.7	3.0	
9.2		38.8	30.4		9.4		48.0	52.5		10	22	0.0	15.6		9.8		28.5	15.1		9.5		47.7	14.5	
9.0		48.0	5.4	A	9.5		50.8	33.4		9.5		10.2	43.1		9.3		43.7	17.6		10		48.6	30.1	
8.9		55.6	38.7		9.5	4	9.2	23.7		9.3	23	13.9	7.1		8.9	41	38.0	23.1		8.7	56	6.5	35.5	A
10		56.6	30.0		8.3		30.4	17.6	A	9.8		23.7	20.7		9.3		39.6	47.9		9.8		26.2	32.8	
9.2		59.6	39.2		6.3		32.3	34.1	A	9.5		36.3	1.8		9.5	43	12.3	0.4		8.4	57	3.9	9.0	A
10	47	33.9	38.6		9.5		48.1	11.6		8.7		49.5	21.3	B	9.1		14.4	8.1	A	9.7		11.6	39.4	
9.5		48.2	58.0		10	5	28.9	7.8		9.3		56.9	21.6		9.5		18.1	18.3		9.5		18.9	58.9	
9.0	48	11.3	29.9		7.8		30.8	36.4	A	8.3	24	10.4	3.3	A	8.0	44	4.9	3.4	A	6.2		32.5	59.4	A
7.5		20.5	38.1	A	9.5		45.0	8.2		9.1		33.3	57.7		9.1		15.8	37.5	A	8.5		39.8	7.6	A
8.2	49	7.9	39.0	A	9.8		52.4	50.3		8.8	25	11.2	10.4		9.3		33.8	57.4		9.3	58	2.8	12.9	
10		56.7	55.3		8.4		53.1	31.7	A	9.5		35.0	33.8		9.4		43.1	10.9		9.8		9.3	48.7	
8.4	50	12.3	18.5	A	10		58.0	53.6		9.8	26	10.5	31.7		9.5		52.3	37.1		9.2		35.3	5.7	A
9.5		32.0	0.5		10	6	29.6	42.4		9.8		11.0	46.8		9.7	45	10.7	26.4		8.7		46.8	6.3	A
9.8		46.3	12.8		9.4	7	12.9	5.2		8.5		30.6	2.3	A	9.8		44.2	26.2		10	59	16.2	12.7	
9.4		52.1	2.4		9.8		17.3	53.2		9.0	27	23.3	18.9		7.2		55.8	10.8	A	9.4		24.4	10.7	
7.6	51	13.8	25.6	A	9.1		23.5	23.7		9.2		41.4	5.7		9.6	46	20.9	39.5		10		45.3	52.3	
9.0		40.3	22.6	A	10		32.7	21.1		9.8		42.8	26.5		9.6		27.9	41.8		9.1		58.8	13.2	
9.5	52	16.9	11.7		9.0	8	10.8	10.8		9.1		56.4	42.7		9.6		38.9	39.7		9.5	0	8.9	9.2	
9.5		26.2	7.0		10		23.1	6.2		10	28	1.2	34.6		9.9		51.4	39.7		9.2		14.5	30.6	R
9.5	53	17.1	50.5		10	9	20.0	32.7		8.4		2.0	43.4	B	9.9		55.7	22.4		7.8		21.9	22.6	B
8.0		18.0	38.9	A	9.1		33.1	40.0		8.5		15.7	33.4		9.7	47	2.7	13.9		9.4		23.5	14.6	
9.8	54	0.3	19.3		9.3	10	7.6	18.1		9.5		20.2	27.9		9.6		17.3	58.7		9.3		27.8	56.5	
9.8		35.8	33.0		8.8		30.2	51.3	A	9.5		34.2	30.7		9.2		48.9	14.3		9.8	1	9.2	54.4	
9.5		41.1	34.1		8.3		31.5	36.3	A	9.7		43.3	30.1		9.8	48	1.7	26.5		10		15.6	0.4	
10	55	47.0	18.2		9.8		48.5	16.9		9.3	29	9.3	20.3		8.5		4.0	51.9	A	10		15.7	11.0	
9.4		47.3	55.1		9.8		49.5	34.5		9.3		16.2	20.5		8.5		8.4	37.8	A	10		30.2	20.1	
9.1	56	7.9	28.5		9.5		56.6	7.5		9.5		29.1	45.3		9.0		39.1	50.9	A	10		33.7	22.6	
9.3		26.9	20.5		8.8	11	11.6	2.5	A	9.2	30	44.1	19.8		9.8		40.6	2.7		9.3	2	8.4	40.0	
9.8		44.4	50.9		9.2		16.6	56.1		9.5		52.1	49.4		9.7		40.6	14.7		7.7		26.6	16.6	A
10	57	3.3	49.1		9.8		26.1	43.6		9.8	31	13.9	23.9		8.5		42.8	34.8	A	9.7		29.1	15.3	
9.3		19.2	13.4		9.7	12	0.4	58.5		9.5		14.0	37.4		8.8		59.6	55.4	A	8.7		32.4	47.4	A
9.7		33.4	19.7		7.0		4.7	4.9	A	8.7		37.4	16.4		9.5	49	6.9	37.9		10		34.3	0.1	
9.5		48.7	23.7		9.0		21.4	56.4		9.1	32	3.2	46.8		10		38.8	31.8		9.4		35.9	1.9	
9.2		55.2	1.4		9.5	13	56.1	55.4		10		3.3	35.7		9.8		55.2	21.0		5.5		42.3	46.4	A
10	58	25.5	43.1		8.5		59.5	46.7	A	9.1		26.6	45.9		9.2		58.3	25.4		9.0	3	16.2	54.9	A
9.7		31.4	18.0		9.5	14	20.9	55.2		8.9		29.4	24.3	A	9.2	50	2.8	29.5		9.6		38.6	14.6	
10	59	29.8	30.9		9.7		28.8	46.3		7.9		45.5	13.6	A	10		13.5	45.4		8.7		40.3	16.5	
9.5		30.7	35.6		8.3		43.4	19.1	A	8.3	33	14.2	49.7	A	10		24.2	55.0		10		48.8	49.0	

801—860				861—920				921—980				981—1040				1041—1100			
	4h	−16°			4h	−16°			4h	−16°			4h	−16°			4h—5h	−16°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.9	3 51.7	57.6		10	20 37.3	19.0		9.2	34 2.2	21.0	A	9.3	45 56.9	48.8	A	9.2	59 53.3	51.1	
10	58.2	57.1		9.7	38.1	21.9		9.2	35 0.1	53.2		9.5	46 15.0	4.1		9.0	54.1	1.4	
9.5	4 11.1	28.4		9.3	39.2	10.4		10	4.6	32.3		9.4	24.3	21.3		9.1	0 26.0	15.3	
9.3	11.8	18.3	A	9.6	40.3	56.7		9.0	6.1	58.4	A	9.5	47.5	22.7		9.2	36.3	31.6	
9.8	19.4	37.9		10	21 24.4	20.5		9.5	15.0	8.5		10	58.0	53.2		9.5	49.3	8.9	
8.8	24.2	34.2	A	9.9	33.3	2.0		8.5	36 12.1	11.3	A	9.3	47 40.1	15.5	A	9.5	58.1	9.3	
7.2	50.2	20.8	A	9.4	22 12.6	38.0		10	22.0	24.8		9.6	48.1	55.2		10	1 16.7	3.5	
9.5	6 30.1	27.8		9.5	30.7	38.1		9.9	30.5	5.0		9.0	54.8	18.3	A	8.9	33.7	59.0	
9.5	31.7	6.5		10	50.8	42.2		9.4	42.9	13.3	A	9.5	48 9.7	47.9		9.1	48.5	39.9	
10	52.1	52.6		9.0	23 0.8	15.6		9.5	48.5	11.8	A	9.9	9.7	35.0		9.7	59.1	58.3	
10	52.7	46.8		10	6.9	57.9		9.3	37 2.8	4.9		6.2	36.8	58.5	B	9.2	2 23.0	15.0	
9.8	7 3.7	17.3		9.6	8.8	3.1		9.3	24.3	39.7		6.0	48.3	39.3	B	9.8	24.2	1.5	
9.5	19.0	4.9		9.8	21.9	19.3		9.0	33.5	20.3	A	8.7	55.6	7.0	A	8.9	29.4	12.4	
7.2	27.6	21.6	B	9.4	36.0	26.4		10	45.5	34.4		9.7	49 19.2	34.1		10	52.7	50.0	
8.7	36.7	55.4		9.7	45.0	21.4		9.2	53.0	8.4		10	24.8	30.3		9.8	3 10.6	41.7	
9.5	54.9	42.7		8.9	24 2.7	12.8	A	9.8	58.0	15.5		8.8	33.6	8.2	A	8.8	28.4	17.2	
7.0	8 25.3	33.0	B	9.0	5.6	35.6		7.2	38 1.0	20.4	A	9.4	49.6	33.3		8.7	29.5	9.7	
9.5	37.6	23.2		8.7	9.3	46.4	A	9.1	1.8	49.5		9.5	50 13.9	48.2		9.8	32.2	26.7	
8.7	37.8	33.6	B	9.2	10.8	47.1	A	9.3	20.8	50.9		7.7	15.9	21.8	A	9.8	46.9	54.0	
7.0	52.7	48.6	B	9.2	20.0	15.1	A	9.5	39 1.9	29.6		9.1	52.2	5.3	A	8.6	4 1.9	10.0	
9.4	9 6.1	41.1		10	28.3	51.7		9.6	20.8	47.5		8.9	53.5	25.8	A	9.0	11.1	39.9	
9.7	14.3	10.9		9.9	46.9	53.6		10	23.4	11.7		9.3	51 0.0	22.0		9.0	11.7	8.4	
9.9	40.4	36.0		9.6	52.0	19.8		9.8	28.4	52.2		9.2	3.2	13.6	A	9.5	36.1	21.1	
9.5	10 1.7	14.5		9.5	57.9	4.2		8.7	32.3	47.2	A	9.4	5.4	19.7		9.3	5 8.8	53.4	
9.1	6.4	39.5		9.6	25 18.2	35.8		8.7	40 7.3	50.5	A	9.7	28.2	24.1		10	18.7	25.5	
9.0	17.2	27.6		8.8	27.0	16.4	A	9.8	8.7	19.9		8.3	32.5	24.7	A	9.0	23.8	3.9	
8.8	18.5	59.4		9.5	26 14.0	54.3		8.5	29.4	25.4		9.0	51.8	55.5	A	9.1	35.4	54.7	
10	11 0.9	15.7		10	18.8	46.6		9.7	31.3	24.6		9.5	54.5	24.6		9.8	6 9.0	33.4	
8.9	4.9	7.9	A	9.2	20.4	5.9		10	45.9	54.5		8.8	57.1	26.0	A	9.8	9.7	13.3	
8.5	35.0	44.7	A	8.5	23.8	4.8	A	9.4	46.4	28.4		9.5	52 4.6	8.5		9.1	15.5	18.7	
10	43.7	20.7		9.5	25.9	51.3		9.0	41 9.3	12.9	A	9.7	22.2	30.0		9.5	20.9	33.1	
8.5	12 40.0	42.6	A	9.2	27 16.7	39.1		9.0	18.3	14.3	A	9.9	30.0	24.5		3	25.7	22.9	
9.4	13 2.5	14.7		9.5	23.8	28.8		9.7	22.2	59.2		6.2	31.6	36.0	B	8.2	30.8	2.5	
9.7	8.9	33.4	A	9.1	32.8	13.5	A	9.3	44.8	0.3		9.8	46.7	53.7		9.6	59.9	51.6	
10	9.4	36.5		9.4	41.1	16.0		9.7	53.0	15.1		9.8	59.1	40.9		10	7 5.0	39.8	
9.5	10.3	23.5		9.5	28 2.9	43.2		6.5	42 0.6	35.3	A	10	53 3.5	20.9		9.3	13.0	53.4	
9.5	27.0	38.4		10	14.1	27.0		9.7	6.5	29.7		9.4	28.3	36.2		9.3	30.1	19.9	
6.8	35.1	47.2	B	9.8	34.9	51.2		8.0	7.1	25.0	A	8.3	28.5	1.0	A	9.0	33.8	49.5	
8.5	44.8	28.5	A	10	38.3	36.9		9.1	32.3	46.2	A	9.2	37.6	56.8	A	9.0	35.5	17.8	
9.0	14 7.0	42.7	A	9.8	29 7.9	3.1		8.5	43 5.0	3.7		9.4	37.7	32.2	A	8.0	36.1	50.1	
9.5	11.2	57.3		9.2	14.5	13.3		9.1	28.2	20.7	A	10	40.8	23.1		10	8 6.2	34.0	
9.9	21.2	0.5		9.4	31.2	32.2		9.8	33.8	41.9		8.3	41.0	7.5	A	9.2	40.2	1.6	
10	23.8	27.0		9.5	34.9	48.7		7.5	34.2	3.0		9.8	42.4	53.2		9.0	43.8	3.3	
9.9	15 49.1	9.9		10	30 52.4	45.0		5.4	38.9	28.3	A	8.4	52.0	18.8	A	9.4	53.2	42.6	
8.7	16 19.5	12.7	B	8.3	53.8	39.1		9.8	41.1	16.7		9.4	53.5	25.1		9.8	9 0.9	56.9	
10	19.8	55.4		9.8	31 9.4	44.8		10	57.2	54.3		8.0	55 51.0	22.5	A	9.5	4.7	0.4	
9.6	38.9	59.2		9.1	32.5	13.5		10	57.3	45.6		8.7	56 23.3	5.0		9.4	13.7	44.7	
9.1	48.3	27.2		9.3	47.8	35.7		10	44 5.9	51.6		9.2	53.0	43.2		9.5	26.9	9.1	
8.2	17 35.4	22.7	A	9.0	56.9	48.3	A	9.0	6.0	33.7	A	9.8	57 25.6	56.8		8.3	29.9	31.0	
9.3	40.3	24.0		9.8	32 22.4	17.9		9.5	22.7	54.0		9.2	28.5	42.9		9.7	30.7	33.2	
9.4	18 3.2	51.7		9.7	30.9	46.6		9.4	45 0.7	14.4		9.4	48.5	19.5		9.3	47.5	18.9	
9.0	39.2	11.4	A	9.0	37.1	21.5		9.0	3.9	1.5		9.8	58 2.8	55.9		9.9	10 5.1	18.6	
7.7	19 1.1	45.3	B	8.5	49.9	16.2		9.1	12.6	34.5	A	9.8	4.8	45.8		9.3	11 29.3	25.1	
9.3	8.0	38.1		9.3	50.9	49.5		9.3	14.2	28.3		8.7	25.7	12.4		9.8	35.6	2.8	
9.3	18.2	12.0	A	9.7	56.0	45.2		8.9	15.1	39.0	A	9.5	50.7	9.2		9.0	35.9	21.7	
9.4	25.6	45.3		8.7	33 7.5	51.2	A	9.3	18.5	39.5		9.4	56.1	46.9		7.7	39.7	20.9	
9.1	45.6	17.4	A	10	8.7	28.0		10	24.3	44.8		9.0	57.4	40.0		9.2	46.6	40.0	
10	48.3	30.5		9.8	9.4	26.6		9.7	37.1	16.1		9.0	57.7	5.4		9.8	59.5	38.0	
9.6	55.9	10.1		9.1	32.1	52.1	A	9.6	40.3	43.7		9.3	59 26.7	17.7		9.4	12 2.8	52.1	
10	20 19.8	54.4		9.4	45.6	51.9		9.4	40.4	46.8	A	9.8	35.9	13.9		9.5	10.5	56.3	

975: 14:78 38′40″0 B_1, Ep. 1883.01 992: UA var 5.4—6.0

1101—1160				1161—1220				1221—1280				1281—1340				1341—1400			
	5h	−16°			5h	−16°			5h	−16°			5h	−16°			5h—6h	−16°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.7	12 11.6	11.2		9.9	24 41.4	24.6		8.5	37 19.5	23.9	A	9.8	45 6.4	42.9		9.1	56 44.1	26.7	
9.3	32.8	8.5		9.3	25 5.6	55.0		9.5	36.8	3.5		10	15.7	13.4		9.1	46.7	1.2	
9.4	36.2	3.6		9.0	19.2	14.4		9.1	50.8	14.5		10	18.0	7.7		8.0	48.9	2.2	A
9.3	36.4	48.2	A	9.3	24.7	57.7		8.0	38 9.0	46.3		9.1	46.2	0.2	A	8.8	57 43.2	8.5	A
9.5	13 41.4	8.1		7.0	28.3	46.6		8.8	14.7	53.5		10	59.3	8.5		9.0	46.3	52.7	
9.5	42.9	24.5		9.8	38.9	2.1		10	35.2	53.2		9.9	46 1.2	13.0		9.4	52.1	46.0	
8.8	53.0	13.8	A	9.8	26 1.3	43.4		8.5	35.3	2.9	A	9.5	4.4	20.0		9.0	58 7.4	36.8	A
10	14 2.0	50.0		7.2	12.4	25.1	B	9.8	55.8	38.9		9.0	19.4	41.5		10	22.5	8.5	
9.5	20.9	55.9		9.4	22.9	44.7		9.0	58.2	0.0	A	9.0	35.0	45.1		5.3	30.6	28.1	A
9.9	22.8	0.2		9.4	59.8	21.5		9.8	59.7	0.4		9.2	53.4	1.9	A	9.5	35.5	20.7	
9.4	30.5	6.6	A	9.4	27 15.6	9.1		9.6	39 13.1	4.4		8.9	55.5	19.6		9.0	59.1	8.7	
10	58.1	37.9		9.5	23.6	35.9		8.7	16.7	0.4	A	7.9	47 2.5	17.6	B	9.0	59 16.3	31.2	A
9.9	59.2	52.9		9.6	33.0	56.3		9.4	37.0	25.2		9.8	4.9	13.1		8.2	20.8	13.7	B
9.7	15 9.6	18.3	A	9.4	54.0	6.5		9.4	37.6	16.7		8.6	5.7	2.2	A	7.8	20.8	56.7	A
9.3	21.5	55.3	A	10	28 12.3	18.0		9.0	44.7	0.8	A	9.8	7.1	39.9		10	44.1	6.0	
9.5	42.1	24.5		9.9	27.2	10.2		9.0	40 1.1	49.4		9.5	29.8	48.2		8.2	0 4.8	52.7	A
8.5	44.1	9.5	A	9.7	29 5.1	10.0		9.5	2.9	54.8		9.8	54.8	34.8		7.0	10.6	30.4	A
9.3	16 7.9	4.0	A	9.7	8.5	10.5		9.8	3.3	2.0		9.9	48 8.7	32.0		9.0	11.8	26.1	A
10	19.3	44.2		8.5	15.9	41.0		9.5	12.2	40.4		9.7	35.3	20.4		8.4	13.2	14.9	A
9.5	22.3	22.1	A	8.4	38.4	57.5	A	9.2	15.5	46.6		9.5	56.6	28.7		10	15.8	3.4	
9.4	32.3	21.7		9.2	50.0	49.7		9.5	18.0	26.3		9.0	49 19.5	50.4		10	20.2	41.2	
9.4	33.0	23.6		8.5	57.9	46.8	A	7.7	30.9	41.9	B	8.5	44.1	44.7		10	37.3	44.3	
9.8	17 5.5	16.0		9.8	30 8.3	38.5		10	35.0	43.3		9.5	58.3	17.9		9.8	38.2	9.9	
9.3	6.5	55.1		10	32.6	32.9		6.4	39.0	17.4	A	9.5	50 1.2	32.5		9.4	40.5	42.5	
9.0	9.0	32.1	A	8.5	52.0	47.2	B	9.0	40.6	27.9		9.7	10.9	14.2		9.7	50.7	4.7	
9.0	22.3	24.9	A	9.3	56.6	30.9		9.4	43.5	18.0		9.4	31.1	56.8		9.8	1 2.9	30.8	
9.3	35.7	11.7	A	10	31 21.7	36.0		9.9	46.8	0.4		10	52.0	44.1		9.8	7.2	16.8	
9.0	42.6	35.3	A	10	21.8	59.4		9.0	49.3	9.7	A	10	55.1	46.3		9.0	13.5	51.5	
8.3	43.4	10.4	A	9.8	39.3	7.5		9.5	41 14.0	7.6		9.3	51 9.5	7.7		9.6	41.7	56.2	
9.4	54.4	1.2	A	9.8	45.3	5.8		9.8	24.4	43.2		9.8	12.8	4.7		9.5	54.9	6.5	
9.8	18 6.9	52.8		9.8	32 1.0	45.0		9.8	31.5	13.8		9.4	15.3	6.9		9.2	59.0	52.4	
9.4	8.5	59.8		9.4	22.5	46.5		9.4	39.1	50.9		9.5	43.0	42.1		9.8	2 17.6	35.6	
9.3	20.0	50.9		10	26.9	56.8		9.8	49.7	31.5		9.5	52 27.6	45.5		9.5	25.9	6.8	
9.8	29.8	48.1		8.3	41.4	10.2	A	10	42 5.9	13.9		9.8	36.1	58.9		9.0	51.6	59.4	
9.5	35.7	42.5		9.7	42.0	21.9		9.8	6.5	8.1		9.5	36.6	17.8		9.0	55.2	13.2	A
10	48.2	22.5		10	56.2	46.0		9.7	11.2	53.9		9.8	37.1	57.3		9.5	3 16.3	3.8	
8.7	19 0.8	44.5	A	10	33 10.3	35.9		10	11.6	17.3		9.8	39.7	29.7		9.5	21.1	34.2	
9.4	2.6	0.1		9.8	37.1	11.4		10	24.9	37.8		9.5	53 5.1	10.2		10	28.9	28.7	
8.5	10.0	5.5	A	8.5	46.2	31.0	B	8.7	25.5	38.8	A	9.2	5.9	47.8		10	31.4	30.6	
9.5	27.8	2.3	A	9.2	50.7	11.1	A	9.4	33.4	58.2		8.0	9.6	47.8	B	9.5	38.1	34.2	
8.5	35.8	45.6	A	9.4	34 3.0	10.2		9.4	45.9	4.4		9.2	16.8	12.7		9.3	50.7	13.5	A
9.8	36.1	34.6		8.7	13.1	13.0	A	9.5	47.3	1.8		9.7	21.5	16.5		9.2	52.6	53.4	
9.9	46.3	43.1		8.8	44.8	57.4		8.8	43 8.3	32.6	A	9.4	30.7	32.0		10	4 35.3	26.8	
9.7	20 20.4	56.3		9.6	35 2.1	45.1		9.3	11.4	6.2		10	31.4	39.5		9.4	35.4	25.4	
8.5	23.6	36.8	A	8.8	6.1	29.6	A	9.4	25.9	27.6	A	9.8	32.3	37.6		9.3	50.9	4.5	
8.0	28.9	27.2	A	9.0	7.2	23.5	A	9.7	31.7	13.1		9.2	36.8	53.3		8.2	52.8	33.7	R
7.5	40.7	38.4	B	10	11.8	7.3		10	41.3	34.9		10	50.7	12.2		8.5	57.1	48.2	A
8.3	21 58.3	58.3	A	6.5	12.7	47.5		9.2	54.7	54.3		9.5	54 11.2	14.7		9.5	57.3	50.0	
9.8	22 33.2	39.9		9.3	14.1	12.3	A	9.0	57.8	14.6	A	9.2	18.3	20.1		9.4	5 5.1	17.1	A
9.2	53.3	18.3		9.3	16.6	0.0		9.5	44 5.4	41.6		10	41.7	9.0		9.5	31.3	14.4	
9.3	23 0.6	15.8		10	35.4	19.3		9.1	10.3	2.5	A	9.5	55.8	58.5		9.5	32.0	29.4	
8.5	12.4	2.0		9.5	40.0	43.9		10	24.7	40.0		9.8	55 2.6	46.6		9.8	34.7	11.8	
9.8	12.8	40.7		9.4	45.8	14.4	A	9.8	25.2	31.3		7.2	5.7	23.8		9.5	49.5	7.2	
8.9	23.9	47.3	A	9.0	50.6	48.6	A	9.0	36.5	1.1	A	10	7.6	44.8		9.4	54.8	17.0	
9.3	24.0	57.9		9.0	53.9	44.3		9.1	42.0	1.6	A	9.8	22.6	44.2		8.7	6 5.9	1.6	A
9.0	54.5	4.3		10	36 6.7	14.0		10	46.0	25.8		9.7	25.9	4.7		9.1	10.8	46.6	A
9.0	24 5.1	12.3	A	9.5	28.6	50.6		9.7	49.9	2.2		8.8	32.7	46.9		10	14.4	55.7	
9.4	8.4	21.8		9.8	50.7	52.3		9.9	50.1	26.7		9.6	54.4	5.2		9.5	23.2	39.9	
10	28.4	47.6		10	37 11.1	50.1		10	54.4	28.6		9.8	56 8.6	57.4		9.0	34.8	51.3	A
9.2	36.7	38.0	A	9.8	16.6	42.0		9.4	55.7	54.3		9.4	30.8	55.6		9.2	50.5	6.3	A

1401—1460				1461—1520				1521—1580				1581—1640				1641—1700			
6h		−16°		6h		−16°		6h		−16°		6h		−16°		6h		−16°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.2	6 52.9	5.0	A	7.2	17 14.0	23.5	B	9.8	26 41.5	31.1		9.3	36 49.0	52.6		9.5	46 53.6	8.8	
9.8	7 0.7	41.0		9.1	22.7	51.9		10	44.1	3.0		9.3	37 4.8	13.9		9.7	58.1	14.9	
10	9.0	16.8		9.2	22.9	33.1		9.8	27 18.2	7.0		9.0	17.5	53.9		9.7	47 5.4	2.1	
9.3	12.8	26.5		9.4	42.8	12.0		9.3	26.0	30.6		9.3	37.6	24.4		8.5	6.0	41.0	
10	39.0	43.4		9.2	44.7	13.0		10	40.9	41.5		9.8	39.0	53.2		9.5	32.1	16.5	
9.9	39.7	19.5		9.7	48.8	58.8		9.0	46.1	11.2		8.5	38 10.2	35.4	B	9.7	47.0	39.9	
9.0	56.1	34.9	A	7.4	51.9	9.2	B	9.4	51.3	20.9		9.3	14.3	38.2		9.7	47.8	57.1	
8.5	8 17.5	9.5	A	9.0	53.4	9.0	L	9.2	28 3.8	3.5		9.8	14.5	57.3		9.6	58.3	19.5	
8.4	20.7	22.8	A	8.9	57.6	42.8		9.5	7.0	30.4		8.5	30.6	38.8	A	8.3	48 5.1	34.8	
9.8	43.4	28.9		10	18 2.2	17.0		9.5	15.3	20.7		8.7	33.2	53.1		9.8	8.3	22.3	
9.7	57.3	44.3		9.3	15.1	5.7		8.8	18.2	3.8		1	44.6	31.6	A	9.7	20.1	8.2	
9.8	9 2.4	47.2		10	23.0	38.0		9.5	22.6	51.1		9.2	54.0	8.8		9.0	22.7	21.5	
7.8	29.1	59.1	A	9.8	39.5	3.2		9.1	26.1	33.7		9.0	39 6.9	44.7	A	9.0	34.2	18.0	
8.7	39.4	13.5	A	9.1	52.5	59.5		10	34.7	55.5		8.8	9.5	46.8	B	9.5	47.2	19.3	
6.8	40.1	34.2	A	8.8	57.6	19.1		10	44.0	30.8		8.2	38.2	19.9	A	8.5	54.4	28.2	A
9.8	10 9.5	53.7		9.9	19 3.1	4.5		8.8	50.7	54.7		8.8	49.0	46.9	A	9.2	55.5	7.4	
9.1	13.9	5.4	A	9.5	21.2	52.0		8.8	29 30.3	41.4		8.8	51.9	43.1	A	9.8	49 4.6	53.7	
9.4	29.9	3.6	A	8.8	28.6	49.6		9.5	40.5	53.0		8.5	40 1.6	53.0	A	8.8	14.8	21.2	A
9.4	31.5	29.1		8.8	28.8	39.1		9.8	30 2.2	27.0		9.1	16.1	12.5		9.2	21.6	33.4	
9.9	31.7	11.0		9.4	29.9	14.1		10	2.7	37.9		9.0	30.9	2.2		9.7	38.0	11.4	
9.8	50.6	35.3		9.0	34.7	7.3		9.1	17.3	15.0		9.5	49.0	53.1		6.0	40.5	51.9	A
9.5	52.7	20.1		9.1	59.3	39.4		7.9	31.7	14.1	B	9.8	41 7.9	7.2		9.8	40.5	15.0	
9.4	57.1	31.7		7.8	20 3.1	31.0	B	10	31.8	31.9		9.8	8.3	3.9		9.4	50.8	9.8	
8.5	59.3	57.0	A	9.0	18.3	39.2		9.5	37.5	10.1		9.5	23.5	8.7		9.6	52.1	42.7	
9.0	11 11.5	12.3	A	10	25.0	0.9		9.4	59.6	53.2		9.5	24.6	33.3		9.8	50 0.9	2.8	
6.0	14.3	45.8	A	8.6	33.1	55.0	B	8.2	31 16.6	53.0	B	9.7	26.4	22.7		8.5	4.5	18.8	A
8.8	21.5	41.2	A	9.3	43.0	1.5		9.4	35.2	35.3		9.5	42.8	41.0		9.2	15.7	17.3	
9.5	32.8	18.1		9.4	48.9	16.2		9.8	38.7	36.4		9.3	42 1.8	58.3		9.7	24.5	52.5	
9.2	46.1	46.6	A	10	21 12.1	53.7		9.1	40.1	20.4		7.8	17.2	3.0	B	8.9	26.6	53.3	A
9.8	51.2	59.4		9.9	16.3	35.7		9.9	54.0	29.1		9.7	24.5	17.2		9.1	31.5	31.2	
10	12 11.6	30.4		9.0	33.8	3.0		9.4	32 0.7	37.6		9.4	24.6	33.4		7.5	34.9	54.6	A
8.7	17.4	23.0	A	10	44.7	35.2		9.4	5.3	20.8		9.8	31.9	18.5		9.0	36.5	17.5	
10	17.7	3.5		9.5	52.3	40.1		9.3	6.4	23.7		9.8	48.0	47.5		8.2	52.5	11.9	A
9.6	22.5	3.3		9.5	53.1	51.5		6.3	7.9	45.0	B	9.5	50.3	19.3		8.8	57.1	54.7	A
10	30.8	18.4		10	22 8.6	26.9		9.5	14.1	15.2		10	43 3.5	40.5		9.1	59.5	50.0	
9.9	39.7	55.4		9.8	9.1	18.3		7.3	15.2	8.1	A	9.4	6.5	37.6		9.0	51 3.7	19.9	A
9.0	46.1	17.1	A	9.4	29.6	19.6		9.5	30.0	50.4		9.6	14.7	43.6		8.2	4.5	42.0	B
9.6	13 13.4	57.5		9.1	31.8	3.9		8.7	31.0	41.2		8.1	15.2	8.8	A	8.5	6.0	17.8	A
9.6	51.3	39.8		9.8	49.1	58.0		8.7	32.3	19.3		9.3	22.3	42.1		10	12.4	30.8	
9.2	59.0	3.9	A	7.3	23 11.1	55.1	B	8.2	50.0	31.8		9.4	33.9	41.8		9.4	13.5	9.5	
9.2	14 5.3	4.6	A	9.3	12.6	17.4		9.5	33 8.6	31.8		10	36.1	12.5		10	25.1	34.0	
9.3	26.3	57.1		9.3	44.0	13.2		9.4	16.9	45.6		9.8	37.1	57.5		9.5	45.0	32.4	
8.0	27.6	54.9	B	10	51.7	32.7		8.7	48.3	21.0		8.7	53.3	46.4	A	9.4	46.4	28.9	
9.5	33.5	23.0		8.2	57.1	50.6	A	9.1	56.4	46.0		6.0	54.0	54.8	A	9.8	51.0	52.5	
9.8	35.1	19.9		9.4	24 5.8	38.6		9.8	34 7.2	17.1		9.5	44 6.7	1.3		8.5	52 4.5	7.4	
8.3	41.3	36.7	B	8.5	25.5	11.5	A	10	14.3	45.7		10	10.6	17.7		8.6	5.5	57.1	A
8.7	51.7	8.5	A	9.4	28.3	37.1		10	15.8	32.8		9.4	23.0	6.5		9.1	6.3	9.1	
8.0	51.9	44.4	B	9.0	41.9	32.5		9.7	29.9	15.0		10	29.0	9.2		9.1	6.7	20.4	
9.5	59.4	22.3		9.0	42.0	36.2		9.5	30.7	7.0		9.0	32.6	32.5		10	21.4	46.3	
9.6	15 9.5	24.5		9.2	43.7	32.0		9.3	46.2	36.0		9.6	39.7	54.1		9.9	29.4	51.7	
9.6	19.2	51.3		9.1	46.0	46.5		9.5	35 6.1	31.9		9.7	49.9	45.8		9.6	29.4	1.4	
9.6	26.1	7.5		9.8	48.4	46.3		9.0	13.0	4.1	B	9.3	45 10.9	25.3		9.0	57.9	52.9	A
10	39.7	51.5		8.7	25 1.1	17.9	A	9.0	22.6	8.2	B	9.6	21.3	21.5		9.4	53 9.8	8.4	
8.5	39.9	32.1		9.0	2.7	9.8	A	9.6	46.4	45.5		9.3	36.9	27.0		8.9	16.1	0.2	
9.8	49.4	12.6		9.2	11.4	22.4	A	9.5	48.6	32.6		9.7	44.9	18.1		9.9	19.8	27.0	
8.6	55.8	39.5		9.3	26.0	25.1		9.0	36 3.6	5.8	B	8.8	51.4	13.0		10	20.4	17.2	
10	16 20.9	43.2		9.8	42.6	28.7		9.5	6.9	48.9		9.3	46 4.9	26.3		9.3	25.5	27.7	
10	17 0.3	55.5		9.3	43.0	1.2		9.5	28.9	45.7		7.3	15.7	2.2	B	9.1	30.2	28.4	A
10	3.6	24.5		10	47.1	1.7		9.8	32.1	6.4		9.4	30.5	8.1		9.3	32.3	21.1	
9.9	10.1	58.8		9.5	53.8	49.0		8.9	37.0	1.2	A	9.7	45.0	10.6		9.5	36.9	13.6	

1701—1760			1761—1820			1821—1880			1881—1940			1941—2000		
6h	—16°		6h—7h	—16°		7h	—16°		7h	—16°		7h	—16°	
m s	′		m	m s	′	m	m s	′	m	m s	′	m	m s	′
53 38.7	7.4	A	9.0	59 29.4	17.1	9.8	5 11.8	44.7	9.1	11 46.2	34.0	A	9.8	17 32.2	37.2	
53.0	50.2	A	9.0	42.3	0.1	A	9.6	26.4	41.1	9.4	47.7	27.1	9.8	53.9	5.8	
54 0.4	46.0		9.1	45.8	59.7	A	9.4	27.1	42.7	9.4	53.8	47.6	9.8	18 1.4	7.2	
1.3	58.1	A	9.5	48.3	13.1		9.8	33.9	55.4	9.2	58.2	34.1	A	10	15.5	25.6	
28.4	14.8		9.5	51.4	9.3		9.3	40.8	27.5	9.0	58.5	56.0		9.5	27.1	19.0	
31.0	4.7		9.6	51.7	6.1		9.7	6 5.7	25.4	8.0	12 6.4	23.0	A	9.5	29.9	56.1	
35.0	22.5		9.3	59.5	19.8		9.5	6.0	21.4	8.6	11.8	1.2		9.6	32.9	18.2	
35.8	43.5		9.4	0 14.7	41.3		9.1	8.4	28.8	9.7	21.7	51.3		9.8	41.3	39.1	
42.1	55.4		9.0	24.5	31.4		9.5	8.4	16.2	9.8	22.2	37.6		9.0	46.5	10.6	A
47.9	10.9		9.1	26.8	35.3		9.2	22.2	8.8	9.8	25.6	37.2		9.4	47.0	57.0	A
55 3.2	35.4		10	27.1	34.2		9.5	27.0	59.3	9.4	25.9	44.7		9.5	48.6	40.3	
11.3	3.5		9.6	27.4	57.8		8.5	35.0	24.4	B	7.1	34.3	56.8	B	9.7	19 1.0	44.4	
17.4	25.4		9.8	29.6	52.3		9.4	35.6	15.6	9.3	38.4	25.2		10	2.4	33.5	
18.0	52.4	A	8.9	31.5	37.9	A	10	39.2	49.0	10	43.3	1.0		9.1	13.1	32.1	
28.9	27.1	A	9.8	38.3	11.6		9.3	41.3	38.7	8.8	47.6	32.0	A	8.7	21.3	55.2	A
35.6	35.1	B	9.3	41.3	22.3		9.2	45.6	1.1	9.8	47.8	45.8		9.8	23.3	21.3	
43.0	17.9		9.1	44.6	36.7	A	8.2	7 12.8	5.4	A	9.6	53.7	43.0		9.5	30.9	29.9	
57.3	22.2		10	48.0	27.4		9.8	34.9	14.3	5.9	54.5	7.9		8.9	58.8	11.5	A
56 7.0	44.7		9.3	53.1	14.2		9.0	40.5	26.5	A	9.5	13 2.8	50.6		9.6	20 0.8	42.3	
10.2	46.5		10	54.1	0.4		9.7	41.3	21.2	10	8.9	22.3			9.6	5.8	26.8	
12.7	18.8		9.1	1 4.9	54.9	A	9.5	43.3	26.3	9.8	25.6	38.8			10	20.0	33.7	
12.9	7.3		9.0	10.1	29.0	A	9.8	53.1	34.3	9.4	32.7	44.0			10	40.8	13.0	
19.5	29.5	A	10	19.5	9.6		10	8 8.1	28.8	9.8	41.4	41.9			8.9	21 23.5	5.6	A
20.9	26.6		9.2	29.3	21.1	B	10	9.4	10.2	8.7	41.4	34.5	A		9.4	26.5	32.8	
35.1	32.3		9.7	29.8	44.9		9.0	24.2	51.9	9.1	44.3	46.2	A		9.7	31.1	54.8	
37.4	33.0		9.7	30.1	43.0		9.3	25.3	30.7	9.8	52.0	32.2			10	35.1	2.7	
42.3	23.1		9.2	35.2	11.2		9.3	27.2	20.9	9.3	14 3.4	27.3			9.1	49.9	24.4	
46.6	28.0		9.0	46.9	18.2	A	9.7	27.4	35.2	9.5	4.8	54.8			10	22 2.1	4.5	
46.8	30.8	A	9.5	48.8	14.6		9.8	41.2	3.4	10	15.9	21.9			8.7	5.8	15.7	
48.3	33.8		9.4	55.1	6.4		9.1	48.1	19.5	9.5	24.7	41.8			10	24.0	39.4	
51.7	15.5		10	57.5	52.4		9.8	53.5	31.6	8.5	32.5	32.0	A		10	31.9	7.5	
57 2.1	33.4	A	9.6	2 19.3	8.1		9.5	9 0.9	20.4	9.5	34.2	34.3			10	33.1	10.5	
8.1	38.0		8.9	24.5	17.3	A	9.8	3.1	17.7	9.5	41.2	57.9			8.7	50.7	41.0	
15.6	0.6	—	9.8	28.5	59.0		9.9	11.3	54.1	8.7	41.6	4.3	A		9.9	52.6	15.6	
20.6	21.5		9.7	32.0	2.8		9.5	14.9	22.3	9.5	48.6	43.9			9.5	23 14.7	31.4	
30.4	41.3	A	9.7	36.1	43.9		9.0	16.5	33.6	A	9.7	49.3	23.0		9.6	24.3	7.9	
44.1	33.2		9.6	36.3	2.3		8.8	36.7	29.5	A	9.6	53.2	37.9		9.8	36.2	25.8	
52.3	54.5		9.3	41.5	40.4		9.1	37.1	3.2	9.3	15 1.3	24.5			7.8	41.0	46.0	B
58.8	45.4		9.6	46.4	14.6		9.2	45.1	56.4	9.4	3.7	0.9			9.9	42.9	6.2	
58 8.0	51.4	A	9.7	48.0	58.0		8.0	48.4	27.6	A	9.4	17.1	46.0		9.5	47.8	3.2	
12.2	42.3		9.0	3 0.1	42.1		9.7	10 7.4	45.2	9.1	17.5	3.3	A		9.2	55.5	29.1	
12.5	8.5		6.0	0.7	0.2	A	9.8	9.9	56.2	9.4	20.8	15.5			9.8	24 0.6	14.3	
18.4	4.3	B	9.7	6.2	30.5		9.1	10.1	31.7	B	7.2	47.1	2.2	A	9.5	7.4	13.6	
24.5	40.8	A	10	12.3	7.1		9.8	11.2	41.3	10	16 6.2	23.9			9.5	7.4	49.8	
30.2	20.8		9.5	12.8	46.4		9.8	15.2	43.2	9.5	11.3	22.8			9.7	9.0	21.9	
34.8	18.2		9.8	14.5	57.8		10	22.7	41.0	9.3	15.4	28.8	A		8.8	10.8	47.8	
43.1	45.3		9.7	32.0	21.3		9.8	25.4	54.3	9.3	15.4	6.0	A		9.7	23.9	9.8	
44.1	36.4		9.3	35.0	0.6		9.5	30.6	54.4	7.8	17.8	26.9	A		9.5	27.4	36.5	
46.1	18.2		10	39.9	45.0		9.4	32.4	20.9	9.5	24.7	46.0			9.7	39.7	17.0	
48.3	25.2		9.6	58.2	49.3		8.9	32.8	12.8	9.6	26.2	48.4			10	52.7	32.1	
54.9	7.8	A	9.8	4 1.6	36.9		9.6	40.8	56.4	9.2	37.5	54.4			8.5	56.0	0.2	
59 0.9	6.5		10	13.7	45.0		9.7	44.2	23.0	10	45.1	53.4			9.3	58.3	56.8	
5.4	28.6		9.8	23.9	23.4		9.0	44.6	38.2	A	8.7	51.3	17.5	A	9.8	58.5	36.4	
8.0	52.4	A	9.7	37.4	28.8		9.7	45.1	58.3	9.7	55.8	14.9			9.0	25 5.7	52.9	A
15.2	22.9		10	37.5	56.6		9.6	55.1	51.3	9.8	17 5.5	19.9			7.9	6.9	53.5	A
23.3	9.7	A	9.8	44.0	29.9		9.2	58.8	54.5	9.4	5.7	28.2			9.4	10.4	46.3	
23.8	29.8		9.4	44.3	53.4		9.6	11 2.7	27.5	9.7	6.2	2.8			9.0	10.9	54.0	
24.5	50.5		9.7	45.2	8.7		9.7	5.1	46.4	9.5	13.2	19.5	A		9.5	11.6	44.7	
27.7	30.8		9.8	47.8	23.7		9.2	26.7	53.5	10	17.3	4.0			9.2	15.5	41.4	
28.9	51.1		9.8	5 6.9	30.1		9.4	40.0	53.1	10	18.2	19.3			9.6	23.1	16.2	

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	7h	—16°			7h	—16°			7h	—16°			7h	—16°			7h—8h	—16°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.2	25 41.8	39.4	B	9.3	32 11.8	3.1		9.3	39 57.6	17.4		9.8	47 15.4	21.1		10	54 3.2	49.9	
9.7	42.7	13.5		8.9	13.7	3.2	A	9.0	40 4.8	47.9		9.4	23.9	38.4		8.8	4.1	10.5	
9.9	53.4	35.7		8.6	21.8	6.2	A	9.9	7.0	12.3		9.3	32.5	5.8		9.4	12.7	0.0	
9.7	59.7	21.8		9.5	25.2	27.8		9.0	16.9	25.0		9.6	35.6	29.7		9.8	15.5	32.6	
9.9	26 4.0	16.7		9.5	47.1	10.5		9.8	31.8	4.9		9.5	42.8	8.5		9.4	20.0	47.6	
8.9	4.8	31.2		9.8	48.1	55.9		9.5	34.9	13.3		9.7	48 11.7	49.0		10	33.9	4.2	
9.8	9.1	54.5		9.8	48.6	7.2		9.3	48.4	6.7	A	9.7	14.5	57.8		9.0	36.0	45.6	A
8.3	11.0	16.7	B	8.8	48.7	20.8		9.5	54.2	40.2		9.4	18.8	16.5		9.8	44.4	59.9	
9.8	19.4	37.9		6.3	51.8	30.8	B	9.5	56.0	42.6		9.3	24.0	26.8		9.3	49.3	20.9	A
8.7	19.7	1.1	A	9.7	33 2.1	3.0		9.3	41 31.3	59.7		9.1	37.5	8.0		9.1	52.0	57.9	
9.4	23.1	4.2		9.6	21.7	18.0		9.8	32.8	55.8		9.8	38.2	50.4		9.4	55 1.3	21.2	
8.8	24.9	54.9	A	9.8	21.8	2.1		9.8	33.7	9.7		9.0	39.9	41.6	A	9.8	23.3	10.0	
9.6	56.0	33.2		9.7	24.2	11.2		9.8	53.0	34.4		9.1	41.4	19.8		9.5	43.1	15.5	
9.5	59.2	28.0		8.5	33.4	13.5	A	9.7	42 1.8	58.6		9.5	57.2	34.8		10	48.9	24.1	
9.2	27 1.6	58.1	A	9.5	36.3	6.9		10	2.0	19.8		9.6	49 3.1	33.7		8.9	56.4	29.5	
9.8	4.0	52.8		8.7	36.8	50.7		8.7	2.5	11.4		10	8.5	13.7		9.4	56 11.5	32.7	
9.7	8.3	53.5		9.5	34 4.9	45.4		9.7	18.9	27.0		10	10.1	10.6		8.3	12.5	18.2	B
9.9	11.2	5.7		9.8	21.0	7.2		9.3	36.3	57.5	A	9.4	13.2	36.5		9.4	24.8	26.2	
10	23.1	44.5		9.0	25.0	10.7	A	9.6	39.7	4.6		9.0	27.5	10.0		9.3	29.0	4.2	
9.3	36.9	31.7		8.9	28.4	9.6	A	9.8	40.0	38.9		8.9	32.0	11.3		9.7	38.3	11.9	
9.6	48.2	42.2		8.0	37.6	48.7	A	9.8	40.7	57.1		9.2	40.1	36.8	A	9.8	40.3	25.7	
9.7	28 6.1	36.0		10	35 2.1	13.6		9.5	44.6	44.7		9.7	44.8	2.3		9.9	41.5	21.4	
10	9.6	55.0		9.8	2.9	18.7		9.4	52.1	58.3		9.9	46.5	4.5		8.2	44.0	16.5	B
9.8	11.4	39.8		10	18.4	30.2		9.3	52.5	14.8		9.3	50 3.3	23.4	A	9.3	49.9	43.4	
9.4	14.1	59.4		9.5	18.6	10.5		8.5	43 0.9	29.8	B	7.8	3.5	14.8	A	9.8	52.4	33.1	
9.7	16.6	47.3		10	32.0	7.9		5.0	8.8	51.8	A	7.0	4.7	8.7	B	9.0	57 7.6	6.9	
8.6	23.8	48.0	A	9.2	36.8	58.9	A	9.8	11.2	10.0		9.0	48.2	29.1		9.2	9.0	37.5	
10	30.4	11.4		10	37.2	38.0		9.0	18.4	48.4	A	9.3	49.6	37.2		9.8	12.0	19.9	
9.7	36.7	19.2		8.7	41.4	46.8	A	9.5	20.9	21.2		9.1	52.4	25.0		9.4	27.8	25.7	
9.8	43.5	42.9		9.4	53.7	35.7		9.5	29.7	59.2		9.5	56.2	41.9		9.8	29.3	39.9	
8.6	46.3	5.3		10	36 1.2	55.7		9.8	38.2	0.4		9.4	57.1	43.7		9.0	32.4	5.7	
9.7	48.1	13.1		9.0	7.4	18.2		9.5	49.9	22.8		10	51 4.9	18.0		8.7	40.0	51.5	A
9.8	50.3	14.9		6.8	26.8	43.0	B	9.7	52.2	59.8		9.8	12.0	56.4		9.8	44.6	1.9	
9.4	29 3.7	39.5		10	36.9	7.2		9.1	58.6	42.1		10	15.2	38.3		9.0	58 0.8	25.8	
9.4	8.1	22.0		9.8	38.0	22.2		9.7	44 7.9	14.7		9.3	17.6	16.9		9.8	16.1	7.3	
9.1	21.1	50.5	A	9.3	43.7	54.2		9.7	8.7	6.6		9.8	18.1	0.8		10	17.7	35.5	
7.9	35.6	34.5	B	9.1	45.7	55.9	A	9.0	10.5	30.1		9.8	19.1	10.4		7.8	32.0	36.7	A
10	39.4	20.9		9.5	53.2	21.8		9.4	16.4	13.0		10	41.8	12.3		9.2	34.7	48.3	A
9.7	40.5	59.3		9.3	57.3	58.8		9.8	24.1	59.4		10	50.8	1.8		8.6	36.7	15.1	
9.7	40.8	35.2		9.6	58.7	1.1		9.0	27.7	46.5	A	9.9	51.7	26.1		9.1	38.0	12.9	
8.5	45.5	52.1	A	8.2	37 34.1	35.2	B	10	42.7	51.2		9.3	52 2.7	43.3		9.6	48.5	41.7	
9.5	30 2.8	38.9		9.8	39.2	44.4		8.2	52.7	14.2	A	9.3	5.4	55.7		10	59.0	17.3	
9.5	3.0	31.8		10	41.6	17.4		8.5	56.1	39.6	A	9.4	11.3	18.8		9.8	59.0	22.8	
10	14.7	39.7		9.4	43.9	20.0		9.4	45 1.8	27.5		7.3	20.6	39.7	A	9.4	59 4.2	21.2	
9.5	18.5	44.2		8.1	38 4.7	56.5		9.5	15.9	23.8		8.7	22.5	32.4	A	9.3	21.7	21.1	A
10	32.1	49.6		9.4	7.7	59.9		9.1	19.8	25.8	A	8.1	41.9	27.0	A	9.1	24.3	24.0	A
9.6	32.9	13.3	A	9.0	24.1	33.1		9.4	24.4	22.9		8.0	42.6	17.5	A	9.0	37.3	23.8	A
9.8	38.6	58.8		9.8	27.8	58.3		8.7	51.1	18.8	A	9.8	44.4	29.0		9.5	38.5	39.8	
9.5	49.6	37.8		9.2	46.2	30.2		9.0	46 5.1	43.6		9.0	47.8	47.3	A	9.0	48.4	56.1	
9.2	55.2	9.4	A	9.3	47.9	33.2		9.8	7.4	3.6		9.5	50.3	50.6		9.4	49.6	2.5	
9.8	31 1.5	13.5		8.7	48.3	14.3		9.3	15.0	41.4		9.5	53 10.1	4.6		8.5	53.1	46.8	B
8.3	5.7	5.5	A	9.3	59.0	14.8		9.2	35.7	48.3		9.5	13.8	59.9		9.8	53.4	50.8	
9.7	9.5	28.8		9.2	39 7.1	37.5		9.1	39.0	48.0		9.0	17.9	51.0		9.6	55.6	20.5	
9.7	11.3	58.4		9.8	8.8	12.8		9.6	42.3	25.2		9.3	22.9	16.7		9.8	0 2.1	16.3	
9.6	12.1	25.3		9.7	12.8	53.2		8.7	47.3	27.0	A	9.7	27.9	55.7		8.0	4.7	52.8	B
9.7	30.2	8.9		9.0	13.3	59.0		10	53.2	59.9		9.3	30.8	51.7		9.8	10.5	36.0	
9.2	41.4	53.8		9.3	24.1	40.2		10	55.9	12.6		7.0	36.3	33.5	A	9.8	11.3	32.0	
9.5	32 2.8	38.5		9.3	26.9	15.6		8.9	59.1	51.4		9.5	36.4	3.6		10	17.6	48.5	
9.7	5.5	14.7		9.1	34.3	13.4	A	9.7	47 4.5	6.0		9.6	49.3	36.7		9.4	25.9	0.5	
9.2	5.9	23.2		9.3	45.3	0.2		8.2	7.0	28.7	A	7.5	54.7	38.3	A	9.3	27.5	10.8	A

2301—2360				2361—2420				2421—2480				2481—2540				2541—2600			
	8h		—16°		8h		—16°		8h		—16°		8h		—16°		8h		—16°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.8	0	31.3	34.5	9.5	8	2.9	13.2	8.8	16	35.6	48.1	A	9.4	23	35.8	58.8		6.5	33	14.0	47.4	A
9.5		31.7	16.1	9.6		19.9	14.9	9.5		49.2	37.1		9.4		41.2	3.1		9.0		20.9	44.8	A
9.6		41.4	8.3	6.8		20.3	49.8	A	9.2		49.7	50.5	A	9.6	24	9.3	56.8		9.5		23.3	35.2	
6.8		41.9	57.3	A	9.9		21.4	9.9	8.4		50.1	11.5		8.5		12.3	58.8	A	9.8		34.3	34.7	
9.8		43.0	40.5	9.1		24.5	46.8	9.2	17	5.8	42.6		9.0		22.0	31.3	B	9.5		39.9	59.4	
9.2		58.5	55.9	9.5		24.9	14.4	9.8		9.7	9.9		9.5		22.9	47.8		9.3		39.9	7.3	
9.8	1	6.5	27.3	9.1		30.0	0.2	8.7		16.1	37.7	A	9.9		27.4	16.6		9.2		45.3	56.9	A
9.2		13.5	55.9	8.7		46.2	12.1	9.8		26.4	9.4		8.5		39.9	31.4	B	9.5		48.6	2.8	
9.5		24.4	35.0	9.8		46.9	45.9	9.0		28.6	25.1		9.8		55.9	58.3		9.4		58.1	26.8	
9.0		25.9	35.7	A	9.5		49.6	58.5	9.5		39.2	55.4		9.4	25	1.2	48.2		8.0	34	14.8	49.6	A
9.8		27.8	12.7	9.5		53.0	17.5	9.7		41.7	18.8		9.3		3.2	11.3		9.2		17.8	1.6	
9.5		47.2	2.4	10	9	2.3	3.7	9.6		51.3	47.0		9.8		17.6	40.2		9.8		32.5	50.0	
9.5		51.1	45.6	9.0		26.0	55.6	A	9.4		59.6	5.0		8.9		19.3	23.9		9.4		40.0	48.0	
10		52.2	55.7	9.0		34.7	0.0	A	9.2	18	0.3	15.2		9.2		19.5	2.1		9.5		41.3	40.0	
9.8	2	0.9	59.9	9.4		48.4	55.4		9.4		9.8	42.4	A	10		39.8	21.2		9.0		54.5	7.9	
9.1		11.2	53.6	8.2	10	0.8	11.9		9.3		10.1	37.7	A	8.7		49.9	18.3		9.1	35	3.6	44.6	
9.2		19.3	32.4	9.3		11.9	45.8		9.5		12.9	0.0		9.4		57.0	52.2		9.8		12.5	50.8	
9.4		20.8	49.4	10		17.0	13.2		9.0		24.1	19.1		9.6	26	17.1	16.2		9.7		17.0	57.9	
8.6		39.8	56.1	B	9.1		18.1	28.3		9.8		29.4	17.9		9.2		30.5	27.5		7.6		26.5	55.0	A
9.8		57.1	46.7		10		25.3	2.6		8.2		48.6	30.8	A	10		34.4	48.9		9.1		58.6	53.5	
10	3	0.5	28.5		9.0		39.0	56.5	A	9.6	19	1.0	54.5		10		39.7	19.8		9.8	36	1.7	13.5	
9.1		5.0	45.0		8.8		42.7	0.0	A	6.7		2.4	57.9	B	10		41.3	12.8		8.5		21.8	40.8	A
9.0		13.3	32.3		10		48.4	45.0		9.3		2.4	50.9		9.0		41.4	59.2		9.4		38.0	23.4	
9.3		15.2	31.0		9.8	11	4.3	35.7		9.7		8.7	19.2		8.8		41.6	30.8		9.0		50.4	42.6	A
10		18.6	0.5		9.8		7.3	16.3		9.6		9.1	3.9		9.2	27	7.6	47.8		9.0		58.3	3.0	
9.5		39.7	53.3		9.5		7.5	49.1		9.4		24.6	22.5		9.4		9.2	32.8		8.0	37	8.1	29.4	B
9.5		50.5	46.6		8.0		22.6	24.8	B	9.5		25.0	19.1		9.0		19.3	28.4		9.5		23.2	6.4	
9.2		51.4	18.2		9.8		23.4	17.8		9.1		35.8	44.2		9.8		22.9	5.4		9.0		25.5	51.0	
9.0		52.3	56.5	A	8.5		36.5	20.9	A	9.8		45.0	13.2		8.8		45.7	9.2		9.0		27.4	25.4	
9.8	4	7.8	58.2		9.5		50.8	43.0		9.4		57.3	45.8		9.0	28	3.9	19.0		10		29.7	13.4	
9.0		10.5	9.0		9.4		56.7	27.0		9.7	20	29.2	37.1		10		31.3	29.2		9.8		36.5	53.3	
9.1		12.8	57.7	A	9.6	12	1.2	5.3		10		31.3	19.4		9.8		48.8	27.2		9.5	38	1.7	6.3	
9.8		26.1	51.3		9.7		23.7	4.9		9.0		37.1	3.8		9.1		49.2	51.7		10		17.2	5.4	
8.6		30.2	9.9	A	9.6		36.4	10.3		10		56.2	41.0		9.5	29	1.6	44.3		10		26.6	18.1	
9.8		31.1	18.4		8.3		39.0	24.5	A	9.3	21	5.2	38.8		9.8		5.1	49.2		10		36.7	19.6	
9.8		45.0	15.7		10		43.2	33.4		9.5		6.1	34.6		9.1		23.4	10.3		9.5		53.4	21.8	
9.0		45.9	36.5		9.4		46.4	44.8		8.0		14.9	23.8	A	9.3		34.0	7.5		9.8		54.5	37.7	
9.8		51.6	51.7		9.6		49.8	14.4		9.4		15.6	7.9		9.8		43.6	52.9		9.1		56.9	23.8	
9.2	5	3.8	37.9		9.8		52.5	1.0		9.1		19.1	37.2		8.5		49.7	54.1		8.5	39	23.8	46.0	
9.3		4.9	4.6		9.8	13	14.9	44.9		9.4		19.9	5.2		9.3	30	16.8	15.6		9.5		25.9	50.7	
8.6		10.2	18.5	A	10		33.2	34.3		8.8		40.3	14.7	A	9.8		21.2	57.3		9.5		46.1	10.0	
9.8		13.2	32.3		9.5		34.1	11.2		9.7		41.9	4.1		9.8		25.6	51.7		9.8		50.9	50.5	
9.4		13.2	54.0		8.8		52.3	44.6	A	9.0		42.5	56.3		9.3		34.0	7.6		9.7	40	1.5	59.1	
9.1		28.7	27.7		8.0	14	17.4	54.1	A	8.6		51.1	54.8	A	9.5		34.3	54.5		9.5		5.2	40.5	
8.8		35.8	0.0		8.3		30.6	32.9	A	9.1		52.2	44.7		8.3		37.4	59.7		9.3		11.1	32.6	
9.4		43.8	18.5		9.7		42.0	10.8		9.8		57.4	32.5		9.1		39.7	26.2		9.0		18.7	34.0	A
9.6		57.4	41.2		9.3		44.0	27.3		10	22	14.7	25.3		8.8		47.8	43.2	A	9.3		25.0	21.8	
9.8	6	32.0	48.3		9.5		51.3	9.9		9.4		21.3	25.3		9.3	31	2.0	9.5		9.7		34.5	59.4	
10		33.3	38.2		10		53.8	23.0		9.7		21.6	17.0		9.4		3.9	12.0		6.8		39.5	31.1	A
8.7		38.2	11.1		8.6	15	0.6	17.9		10		25.0	40.0		9.8		4.2	8.1		8.6		59.5	30.9	A
9.3		54.9	2.6		9.5		9.5	55.0		9.5		34.8	0.9		9.2		27.3	34.0		9.7	41	10.2	55.6	
8.5	7	0.8	41.6		10		36.4	14.5		9.3		34.8	38.8		8.5		33.5	46.5	A	9.1		13.4	57.4	
9.0		15.0	43.4		9.6		42.3	15.5		9.8		38.0	35.4		9.8		44.0	48.7		9.0		38.6	8.4	
9.5		15.5	17.2		9.2		45.5	54.0	A	8.3		53.0	19.4	A	8.1		45.4	29.7	B	9.4	42	19.7	3.0	
10		19.0	52.1		9.1		54.1	31.7		10		59.5	41.0		9.8		57.6	50.3		9.1		29.2	50.4	
10		31.1	24.9		9.0		59.4	6.0		9.4	23	2.7	10.0		9.4	32	20.2	30.6		9.2		29.3	32.6	A
9.8		41.2	29.0		8.7	16	8.8	17.4		9.0		9.6	39.0		9.0		22.0	47.4	A	8.5		40.9	39.4	A
9.4		50.5	49.6		9.5		17.4	43.6		8.2		19.6	13.7	A	9.0		43.6	54.7		9.8		58.8	33.2	
9.4		58.6	21.5		10		20.7	34.9		9.1		31.1	54.9	A	9.5		45.5	20.5		10	43	0.8	17.6	
9.8	8	1.8	36.9		9.5		32.3	52.6		8.0		32.3	20.6	A	10	33	3.8	56.8		8.7		18.4	42.3	A

2601—2660				2661—2720				2721—2780				2781—2840				2841—2900			
	8h	—16°			8h—9h	—16°			9h	—16°			9h	—16°			9h	—16°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.0	43 24.8	56.1	A	10	53 31.4	14.7		9.6	7 37.4	48.9		9.7	18 38.7	5.7		9.5	30 15.2	28.1	
9.5	26.4	34.0		9.8	57.0	43.0		9.3	39.2	51.7		9.8	19 3.8	43.6		9.0	32.8	3.0	
9.4	37.5	8.8		8.6	54 9.9	30.6	B	9.3	53.8	57.3		10	17.1	22.4		8.8	45.7	25.7	B
9.7	39.7	9.4		9.3	42.0	41.5	A	10	8 6.0	4.0		9.4	21.1	13.3		8.9	31 13.4	0.3	A
9.5	55.5	14.5		9.5	48.4	26.3		9.8	16.6	14.3		9.7	20 8.9	17.5		9.0	19.8	4.1	B
9.5	44 13.9	40.2		10	55 22.4	6.3		10	24.2	30.7		8.7	19.2	38.2		8.7	20.9	40.3	A
9.4	21.0	38.3		9.4	32.9	31.1	A	9.4	32.9	10.9		9.0	21.1	1.7		9.8	55.6	56.7	
10	49.8	26.1		9.9	56 4.5	44.1		9.4	57.0	20.0		9.7	22.2	18.9		7.2	32 10.4	58.4	L
9.0	45 3.9	25.9	A	10	16.3	47.3		10	58.3	58.3		9.9	24.8	49.4		9.2	22.7	59.1	
9.5	5.5	43.1		9.2	38.8	53.8	A	10	9 8.6	42.3		10	25.7	38.9		9.7	31.1	41.1	
8.3	18.5	21.6	A	9.4	53.3	14.6		9.5	10.6	49.2		9.8	37.4	3.5		8.3	33 10.6	30.1	
9.3	35.7	24.6		6.8	57 1.8	55.4	A	9.7	13.4	32.5		9.8	54.1	8.2		8.8	14.2	35.9	
9.5	38.9	29.5		9.0	5.0	59.5	A	9.6	25.1	22.2		9.9	57.3	27.5		10	53.7	5.7	
9.5	39.7	37.1		9.5	16.9	51.5		9.6	35.5	0.2		10	57.4	43.6		10	54.8	41.8	
9.5	59.8	26.9		9.4	17.3	19.0		8.3	54.6	14.1	B	10	21 28.0	55.7		9.7	34 9.3	59.0	
9.4	46 6.8	16.5		9.0	24.8	36.5		10	10 3.1	54.5		8.9	30.8	10.6		10	15.6	24.5	
9.4	8.3	23.9		9.5	33.9	44.8		9.1	14.2	59.9		9.8	38.9	55.3		8.0	21.8	43.7	B
6.5	22.3	24.4	A	9.2	39.9	43.2		9.1	19.7	53.3		9.8	22 12.0	53.7		9.8	27.0	16.7	
9.2	27.6	15.6		7.7	56.6	39.7	A	10	26.9	33.6		9.5	20.6	34.6		10	29.0	6.4	
9.1	28.8	56.3		10	58 1.8	35.6		9.1	11 14.0	23.7	A	8.9	26.0	24.7		9.5	38.3	50.7	
9.4	29.4	12.4	A	8.2	35.0	45.7	A	9.9	27.5	41.4		8.8	26.1	37.6		9.8	41.1	57.8	
9.2	35.5	57.3		8.9	59 33.0	33.8	A	8.2	37.9	1.3	B	9.5	32.0	21.4		8.9	50.6	57.8	
9.5	37.6	27.0		9.1	43.2	29.6	A	9.7	45.8	34.7		9.5	37.6	35.7		9.2	53.2	5.1	
8.9	49.9	40.7	A	8.8	55.2	17.5	A	8.7	52.4	36.0	B	7.2	38.7	52.3	B	9.8	35 2.1	26.5	
7.5	54.4	48.3	A	9.8	0 23.9	46.3		9.8	54.0	22.1		9.8	48.1	12.3		9.8	33.7	8.0	
8.2	47 1.8	40.2	A	9.8	33.6	13.5		9.8	54.1	30.1		8.7	23 21.7	58.2	B	9.2	51.5	0.6	
9.4	4.5	49.8		9.8	54.4	49.9		9.7	59.5	46.5		9.8	24.4	19.5		9.0	53.8	49.3	A
9.1	21.4	42.0		9.4	1 14.8	37.2		8.6	12 9.1	12.6	B	9.6	29.3	12.8		10	36 10.7	38.7	
9.8	56.0	11.7		9.6	19.2	10.2		7.0	10.4	11.4	B	9.2	51.2	52.5	A	9.6	36.1	59.8	
10	48 1.1	5.2		8.5	40.5	18.3	A	9.8	20.7	58.9		9.0	24 9.9	55.4		9.6	40.0	14.1	
8.6	48.3	30.7		8.5	53.7	39.8	A	8.5	23.9	34.7	B	9.8	30.4	9.8		8.5	46.9	46.4	A
9.6	49.7	21.3		9.2	2 5.1	31.5		9.4	40.3	47.6		8.8	51.4	25.9		10	48.1	39.7	
9.8	49 15.3	17.0		9.4	13.8	46.3		9.5	40.6	23.5		8.5	25 6.7	10.0	A	9.2	49.0	34.5	
8.7	19.3	13.4		8.1	19.9	10.6	A	9.1	47.5	45.1	A	8.8	19.8	14.6	A	9.6	37 24.0	20.8	
9.1	23.8	25.5		9.8	41.3	58.9		0.2	51.0	51.6	A	8.6	20.9	45.0	B	9.8	34.7	23.7	
9.8	38.9	38.0		9.9	49.2	11.2		9.7	57.3	58.5		9.4	26.5	41.9		9.8	37.3	28.0	
10	46.8	0.1		10	57.8	15.1		8.3	13 39.9	48.4	A	9.1	40.1	47.5	B	9.0	54.8	21.0	A
10	47.3	34.3		9.8	3 22.5	26.0		9.5	14 12.2	5.0		9.8	42.6	48.1		8.4	55.8	10.8	A
6.2	50.2	9.1	B	9.5	23.3	51.0		9.7	18.1	14.3		9.5	51.0	3.8		9.3	38 6.9	20.5	
8.8	50 4.7	28.0		10	24.1	3.4		9.5	19.8	28.1		10	26 3.4	33.0		9.2	13.8	18.6	A
9.8	5.6	48.5		7.2	24.9	16.6	A	9.2	28.2	24.6		10	11.6	2.9		9.8	43.5	51.0	
10	7.4	57.4		9.5	38.2	43.3		9.8	31.4	42.4		9.9	12.5	32.5		9.5	39 25.5	24.7	
9.7	7.6	51.3		8.5	49.6	23.0	A	9.8	52.7	15.6		9.4	19.2	53.7		9.8	28.9	29.8	
7.2	8.0	52.6	B	9.5	53.4	55.8		8.8	15 46.1	17.1	A	9.0	43.5	43.8	A	9.8	40 2.6	49.1	
9.5	18.4	6.2		10	4 9.0	12.1		9.5	54.3	0.8		9.1	45.8	28.0		8.6	9.9	8.8	A
10	19.9	31.9		8.3	5 0.4	13.3	B	9.5	16 4.4	53.1		9.3	46.8	11.2		9.3	14.4	19.8	
9.8	26.1	33.6		9.7	6.8	54.0		8.5	9.5	52.6		9.5	47.1	50.2		7.0	21.5	32.1	A
8.5	51 9.6	45.1		9.0	7.7	23.8		9.5	11.1	16.2		9.0	53.4	8.8		9.4	32.1	17.0	
8.7	19.5	15.9		9.5	11.9	57.4		9.5	31.2	4.3		9.1	27 19.2	54.8		8.8	36.8	12.1	A
9.6	24.6	18.6		9.1	12.5	25.8		7.5	41.8	2.6	B	10	28.3	26.0		10	41 33.9	27.5	
9.9	47.6	36.9		9.3	18.6	2.0		9.5	55.5	54.0		9.8	36.0	44.1		9.0	45.3	14.5	A
8.0	53.2	47.6	B	10	36.5	10.5		9.5	58.2	2.6		9.1	28 19.4	43.7		9.0	55.6	12.7	A
7.1	52 1.9	11.6	B	10	54.0	9.4		10	17 9.8	48.4		9.8	59.9	4.2		9.0	42 12.7	54.7	
9.5	10.3	57.5		9.9	56.8	30.9		9.5	23.4	17.5		9.1	29 2.3	55.9		9.2	13.2	27.5	
9.2	17.6	48.6		8.4	6 0.3	12.0	B	9.1	23.4	52.0	A	9.8	8.0	47.2		9.0	49.8	21.6	
10	27.1	52.2		9.2	8.5	55.5		9.9	51.6	20.7		8.3	20.4	36.3	A	10	43 14.0	43.9	
9.8	42.0	34.1		9.5	24.8	53.5		10	18 6.7	42.9		9.8	24.8	22.9		9.0	28.5	20.3	
8.2	54.2	37.8	B	9.3	45.4	22.9		7.2	11.7	35.5		8.6	35.5	44.5	A	9.2	50.3	26.9	
8.8	58.4	9.8		8.8	49.9	9.6		8.9	29.6	28.6		9.2	40.5	49.4		9.2	58.4	32.9	
9.9	53 10.0	1.4		9.1	7 17.6	36.7		9.3	31.6	33.5		9.3	42.5	50.9		9.3	44 11.5	46.0	

2901—2960				2961—2960				3021—3080				3081—3140				3141—3200			
	9h		−16°		9h–10h		−16°		10h		−15°		10h		−16°		10h–11h		−16°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
8.9	44	18.9	4.0	A	9.8	58	43.9	13.9		9.5	12	56.8	50.6		9.9	26	11.8	12.5		10	45	33.4	34.5	
9.0		33.6	54.1		9.9	59	5.7	37.0		9.5	13	2.8	59.8		9.6		24.1	55.0		7.5		50.3	30.6	B
9.6		47.5	45.3		9.5		23.2	32.1		9.8		10.7	49.7		10		42.4	2.1		8.3		55.9	9.7	A
8.8	45	4.8	40.2		9.5		35.4	18.1		9.8		14.7	41.6		9.7	27	13.1	56.3		8.7	46	31.7	2.6	A
9.3		11.0	52.7		9.3		36.7	19.3	A	9.1		28.2	33.0	B	9.2		26.1	34.4		9.3	47	11.0	0.5	A
9.5		11.3	23.3		10		47.0	1.3		9.0		43.6	32.5	B	9.2		39.0	9.9		8.7		50.0	41.7	A
10		23.2	40.9		8.6		47.8	5.6	A	10	14	8.6	8.2		9.8	28	12.3	2.0		9.8		50.1	35.0	
9.4		29.4	7.0		9.8		56.6	12.7		8.5		11.4	51.7	B	8.0		16.2	26.8	B	9.6		55.8	23.1	
8.5		40.5	45.3		7.0		57.8	44.0	B	9.5		17.6	16.5		9.3		24.0	41.5		8.9	48	1.7	1.8	A
9.7	46	1.2	52.7		9.2	0	1.4	19.2		8.8		19.6	19.2		8.2		41.4	37.5	B	9.3		50.2	28.7	
9.1		6.8	12.3		10		7.7	53.5		9.1		22.1	32.3	B	10		44.0	48.4		9.3	49	5.4	57.7	
9.8		21.1	6.8		9.9		9.3	20.5		9.9		39.5	20.0		9.3		44.9	56.7		8.2		36.6	40.2	A
9.1		36.3	27.4		8.0		9.7	46.6	B	9.8	15	6.1	21.5		9.8	29	0.7	17.0		9.3		45.0	14.2	
10		47.9	2.8		5.3		12.6	25.6	A	10		16.2	36.0		9.8		7.7	13.7		9.6		47.8	14.0	
9.1		49.4	48.6	A	9.0		13.4	41.2		9.1		23.2	46.1	A	10		37.5	45.5		9.2	50	9.1	10.5	A
10	47	0.8	40.8		10		15.1	17.5		9.1		28.1	51.7	A	9.5	30	35.4	26.8		9.7		41.0	0.2	
9.0		38.4	40.6		9.4		23.2	59.7		9.4		55.6	6.0		8.0		52.6	59.0	A	9.2		47.7	11.9	A
9.1		44.2	56.2	A	9.0		39.2	46.5		9.0	16	0.1	6.9		9.8	31	8.7	1.1		9.2	51	10.2	44.0	
9.0	48	1.8	4.4		9.8		45.1	28.7		9.5		36.2	36.7		9.0		30.4	36.7		9.2		19.1	48.4	
9.9		28.6	8.9		9.9		45.8	30.8		9.0		38.6	36.9	A	5.2		30.5	7.4	A	9.7		36.6	53.9	
7.2		41.5	46.7	A	9.8	2	32.1	24.5		9.3		41.5	52.2		8.8		49.8	28.8		9.7	52	4.5	26.1	
10	49	29.5	23.6		9.5	3	11.6	51.1		9.4		50.9	2.8		9.1	32	1.5	49.6	B	8.6		7.2	20.0	
8.6		49.0	46.4	A	9.2		15.9	10.9		9.1		54.1	43.6	A	8.4		4.9	49.2	B	7.8		7.4	50.9	A
8.6	50	10.1	55.8	A	10		23.5	40.0		9.8	17	8.8	19.9		9.1		53.4	44.3	A	8.7		45.7	32.1	A
10		12.0	20.6		9.8		25.5	32.5		8.5		12.0	42.2	A	9.4	33	5.9	44.5		9.4	53	15.3	55.6	A
8.5		17.3	3.5		9.0		33.3	3.8		9.5		57.1	44.2		9.4		23.3	48.6	A	9.3		32.9	18.2	
9.3		29.8	53.3		7.5		58.9	12.7	A	9.6	18	10.0	21.5		9.4	34	27.8	46.0	A	9.3		44.2	34.8	
9.2		32.6	45.3	A	9.5	4	20.4	18.3		9.7		17.2	7.1		8.6	35	7.8	33.7		9.4		57.1	23.8	
9.4		51.7	19.9		7.7		20.7	55.8	A	9.8		22.5	0.8		9.0		9.7	29.5		10	54	7.1	33.2	
9.7		52.2	4.0		9.9		24.4	5.0		8.8		35.0	0.9		9.8		17.2	54.8		9.8		13.1	38.5	
9.1	51	23.7	17.4		9.5		33.1	21.3		10		35.5	55.4		7.9		34.8	58.0	A	8.7		17.5	7.7	B
9.5		36.7	12.1		9.5	5	3.2	13.7	A	4.0	19	3.9	5.6	L	8.5		35.6	48.4	A	7.8		19.0	9.8	B
9.8		41.5	37.4		9.0		24.9	25.1	A	10		9.0	33.3		9.6	36	5.1	3.0		9.4		24.1	18.7	
10	52	10.0	48.4		9.2		29.9	17.9	A	9.8		11.4	11.4		9.3		14.3	23.3	A	8.0		28.1	34.0	A
9.9		22.8	2.3		9.3		41.5	20.6		9.6		21.0	53.7		9.4		25.4	26.0	A	9.0	55	18.6	42.8	A
9.5		31.5	45.7		9.3	6	14.4	26.4		8.8		29.2	57.5	A	9.8	37	6.6	47.7		9.8		45.0	41.7	
9.5		48.7	5.5		9.8		30.4	26.0		8.8		54.0	52.3		9.2		14.7	46.1		9.8	56	5.6	10.4	
8.8	53	14.8	57.0	A	9.8	7	10.5	7.6		9.1	20	2.4	29.5		9.3		49.2	29.0		9.3		6.9	0.6	A
9.4		19.9	56.0		9.1		11.3	27.2		8.8		4.3	10.1		9.3	38	7.8	7.3		9.0		8.6	39.3	A
9.5	54	12.9	49.4		9.8		28.0	7.3		8.0		18.5	41.0		9.9		9.5	14.8		9.8	57	32.5	33.1	
9.2		16.4	51.6		9.1	8	11.5	45.7		9.0		28.6	10.1		8.8		11.6	39.9		8.5		35.8	5.6	B
8.8		32.8	40.3		9.4		16.0	3.9		9.5		41.4	51.0		8.5		45.6	20.3		9.8		38.4	55.7	
8.0		41.9	38.0	A	10		30.3	56.4		9.0		43.5	33.5		10	39	45.0	40.2		9.5		41.7	55.7	
9.3		51.6	18.1		8.2	9	15.8	41.6	A	9.0	21	9.7	20.7		6.2		45.8	31.3	L	10		59.5	50.1	
9.6	55	10.2	1.2		9.5		17.2	27.5		9.0	22	17.4	23.5	A	9.2		48.0	28.4		9.8	58	10.4	22.6	
9.8	56	11.3	50.3		9.3		23.1	18.6		10		22.9	21.2		9.8		54.7	10.5		9.8		13.7	46.1	
8.9		12.3	27.0	A	9.9		25.1	26.5		9.3		24.4	38.7	A	8.5	40	4.6	39.2		9.6		13.7	10.0	
9.5		24.3	3.0		8.2		26.0	3.1	A	9.4		43.9	56.9		9.7		25.0	44.5		9.4		14.0	42.3	
8.0		24.3	28.8	A	9.8		40.7	2.8		9.5	23	11.7	3.2		9.2		55.5	35.5	A	9.8		54.8	3.9	
9.4		26.4	42.5		9.5		49.9	41.0		9.6		11.8	54.2		9.2	41	21.8	30.0	A	9.6	59	16.4	45.2	
9.5		37.2	36.8		9.5	10	4.3	24.0		9.1		17.3	55.8	A	9.8		22.0	4.8		9.5		42.4	30.0	
9.8		38.2	24.3		9.8		26.2	31.4		8.7	24	2.3	50.6	A	10		46.0	24.9		10	0	27.8	15.8	
9.1		45.3	46.5		8.0		38.6	48.9	A	9.4		7.9	15.1		9.1	42	34.7	2.7		9.5	1	26.6	52.5	
9.3	57	1.7	34.7	A	10	11	14.2	28.1		9.4		13.2	6.0		9.2	43	2.5	33.7	A	9.5		32.3	45.0	
9.6		50.9	30.7		9.0		40.3	49.0	A	7.8		31.2	20.0	B	9.1		32.0	19.4		9.4		54.8	44.4	
10	58	5.5	28.9		9.6	12	13.7	55.2		9.6		56.2	17.3		8.6	44	1.9	43.1		9.7	2	51.8	39.2	
8.2		14.5	15.0	A	9.2		20.8	41.7	A	9.3	25	19.8	12.7		10		28.9	46.6		10		56.3	43.7	
9.8		23.2	50.5		8.6		22.8	44.6	A	7.4		37.7	12.7	A	9.3		29.3	1.1		8.7		56.8	47.0	A
9.2		28.1	55.6		9.5		42.7	53.3		9.8		41.3	46.0		8.8		32.9	55.6		8.9	3	42.6	54.4	A
9.8		42.7	23.1		10		50.3	45.7		9.3		52.9	31.5		7.8	45	32.3	15.4	A	7.7		56.2	20.7	A

2974: röthlich

3201—3260				3261—3320				3321—3380				3381—3440				3441—3500			
	11h	—16°			11h	—16°			11h	—16°			11h—12h	—16°			12h	—16°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.7	5 4.7	40.5	A	9.8	22 19.5	43.2		10	38 48.3	29.9		9.8	55 59.9	5.9		10	12 50.7	17.2	
9.8	13.7	45.9		7.7	41.0	58.1	A	10	58.6	9.7		9.1	56 8.3	24.8		9.1	13 10.3	40.3	
9.5	21.2	10.6	A	10	46.7	42.1		10	39 1.3	29.1		9.2	8.6	40.1		9.0	35.6	4.5	
9.3	29.6	57.2		10	23 0.0	29.0		9.0	30.8	44.5		9.7	10.5	50.5		9.6	44.2	18.6	
10	54.4	43.4		8.8	6.3	58.3	A	9.5	40 7.2	59.7		9.4	35.6	46.0		9.3	14 21.4	20.5	A
8.0	55.1	28.2		9.2	22.4	24.1		9.8	23.3	32.5		9.8	58.9	6.2		9.8	22.9	33.2	
8.8	6 5.5	36.9	A	9.8	22.5	18.8		9.0	35.7	43.3	A	9.8	57 12.7	26.8		9.6	37.9	12.2	
9.0	28.2	45.2	A	9.5	32.4	24.0		9.8	41 15.9	13.4		9.7	42.5	59.2		9.7	43.4	43.2	
10	44.6	33.6		9.3	24 6.0	59.0	A	9.7	28.1	59.4		9.1	58 43.3	43.4		9.3	54.7	44.1	
7.5	57.3	5.8	M	9.0	26.9	45.7	A	9.0	34.3	20.4	A	9.8	59 10.7	13.4		9.6	15 7.8	58.1	
8.8	7 2.5	37.8		9.8	32.4	49.8		9.1	42.4	3.6	A	9.2	35.6	26.9		9.8	23.7	38.6	
9.5	15.6	17.5		9.4	33.1	36.6		9.1	48.9	34.5	A	9.6	55.3	23.8		9.6	49.8	29.9	
9.8	28.1	40.1		10	45.3	16.2		8.2	42 16.9	48.1	A	9.0	0 30.3	7.3		10	16 11.3	15.5	
8.7	28.6	23.3	M	9.4	53.4	51.1	A	9.1	16.9	21.5	A	8.8	33.4	41.5	A	9.6	14.4	51.7	A
8.6	8 5.5	42.1	M	9.1	25 24.3	40.6	A	8.8	30.7	15.2	A	9.2	1 6.4	24.6	A	9.7	40.1	7.0	
9.9	52.8	40.9		9.5	32.3	11.7		10	57.2	48.3		8.5	21.1	20.6	A	9.3	17 44.0	56.0	A
9.8	9 1.7	44.5		10	50.8	46.5		8.2	43 8.0	56.1	B	9.4	22.2	8.6		10	55.5	50.2	
9.8	37.4	35.0		10	26 31.0	20.5		9.1	30.1	24.4	A	9.6	45.3	28.3		9.5	18 13.6	58.6	
9.8	53.2	3.5		9.4	55.9	5.5		9.5	44 8.1	53.7		9.1	2 8.8	45.9		8.5	24.3	26.2	A
9.2	54.6	34.0	A	8.9	27 3.8	18.4	A	9.6	11.6	53.0		9.4	10.5	45.9		9.4	26.0	18.7	A
10	10 0.1	36.8		9.3	27.9	20.1	A	8.2	15.5	45.7	A	8.5	25.6	16.3	A	9.3	38.0	41.0	
9.0	50.9	30.6	A	9.2	46.9	38.7		10	22.1	23.3		9.2	36.4	48.0		9.7	44.0	55.8	
8.2	54.9	46.7	A	9.8	48.0	13.4		9.4	28.3	25.9		7.0	38.9	43.6	B	9.5	45.1	53.1	
9.5	11 19.6	8.9		9.7	51.9	16.5		9.0	45 4.3	54.7	A	10	43.5	54.7		9.8	19 10.4	10.7	
9.3	19.7	51.4	A	9.5	55.1	29.8		9.2	9.1	32.3		8.2	3 2.1	23.9	A	9.3	25.1	19.4	A
9.3	40.5	21.1		9.9	28 23.9	42.7		9.0	11.0	30.7	A	9.6	7.8	32.3		8.3	20 18.9	40.3	A
10	45.4	28.4		9.8	24.0	13.6		8.8	43.0	46.6		8.5	13.7	8.9	A	9.0	35.2	36.3	A
9.8	12 19.9	20.1		9.4	35.2	50.1		9.5	59.9	22.4		10	33.8	59.7		9.6	36.2	11.9	
9.1	20.9	42.5	A	10	29 5.6	22.0		9.4	46 3.8	13.3		9.2	36.3	48.2		9.3	51.6	6.4	
9.5	52.6	8.0		7.0	11.1	2.7	B	8.5	23.5	36.0		9.3	4 27.9	22.5		9.4	51.6	19.3	
9.6	13 9.8	48.0		9.3	47.1	56.3		9.3	48.8	7.5		10	33.7	55.9		8.4	58.2	29.5	A
9.1	12.1	40.9	A	10	30 2.4	4.6		9.0	47 14.8	15.0		9.1	39.2	37.5	A	9.4	21 19.7	47.4	A
10	14 3.8	25.2		8.3	15.9	7.5	A	9.5	35.1	9.8		8.5	55.3	23.9	B	8.8	22.7	26.2	A
9.5	23.8	33.0		9.5	17.8	4.5		9.0	42.0	50.1	A	9.5	5 4.8	17.0		10	46.5	55.1	
10	15 2.5	8.4		8.9	47.4	12.7	A	9.7	48 7.1	9.8		8.3	29.5	19.7	B	8.7	22 13.6	21.2	A
9.3	8.2	37.1		9.7	48.3	2.9		10	7.9	51.6		9.4	36.7	38.6		9.3	23 9.2	54.5	
9.0	28.0	31.3		9.1	31 25.9	39.5	A	10	32.6	0.4		9.8	6 8.4	17.3	A	8.8	10.4	9.4	A
8.0	16 15.7	49.2	B	9.1	46.1	30.6		5.4	37.5	20.4	L	8.5	35.8	57.2	A	10	29.8	56.3	
10	43.2	16.0		8.7	32 16.0	46.4	A	9.0	48.5	27.9		9.3	42.7	25.8		10	33.2	11.4	
10	47.1	16.5		9.1	20.7	3.7		10	49 4.8	50.5		9.8	49.7	14.3		8.7	39.4	54.9	
9.2	50.4	4.6		10	25.5	41.3		9.3	50 5.7	12.5		9.7	56.7	44.8		9.3	24 16.9	21.1	
9.8	56.5	55.9		9.8	53.6	50.0		9.2	9.4	29.2		9.4	7 28.6	42.7		9.5	20.0	31.5	
9.1	17 25.7	16.3		9.8	33 0.3	59.0		9.3	32.8	37.3		9.2	8 16.5	36.9		9.0	24.1	38.7	
4.2	38.6	53.0	L	7.0	50.2	54.0	A	9.1	34.3	52.0		2	20.7	43.5	B	10	25.1	14.5	
9.8	45.7	24.2		9.8	50.9	36.8		9.3	56.5	51.4		10	34.4	53.8		9.8	25.5	30.4	
9.5	18 3.2	54.7		10	34 1.7	34.9		9.1	51 7.1	9.1	A	9.7	58.0	4.0		9.6	50.5	15.9	
8.9	22.5	37.3	M	9.8	7.8	56.5		8.5	21.3	57.0	A	9.3	9 3.7	16.4		9.8	57.3	37.7	
9.7	32.9	8.4		7.5	43.3	12.7	A	9.3	21.6	12.0		9.8	6.5	36.8		7.8	25 9.6	25.0	
10	59.6	31.4		9.3	45.4	28.7		9.4	49.1	1.1		9.4	12.0	31.7		9.7	11.4	5.5	
9.6	19 2.1	45.8		8.6	35 45.9	23.1	A	9.8	52 23.2	24.4		9.1	10 1.2	21.6		9.2	23.5	26.4	
9.5	23.1	50.1		9.7	51.2	55.1		10	38.2	57.7		10	1.5	16.8		10	48.2	57.0	
9.4	24.0	58.6		9.5	59.4	34.5		9.5	56.3	41.2		9.0	15.5	32.7		8.3	26 3.9	59.4	
10	29.8	10.9		9.0	36 24.9	43.7	A	8.8	54 1.1	42.7		9.0	21.7	18.5	A	8.8	13.6	55.4	
9.3	55.6	41.5		9.6	25.8	37.5	A	9.6	32.2	29.3		7.9	25.5	8.8	A	9.8	18.3	48.2	
9.6	20 3.0	57.3		8.4	48.9	19.6	A	9.4	47.1	36.8		9.2	29.3	1.5	A	9.3	19.4	11.1	A
9.8	51.2	13.0		9.4	49.9	42.3	A	9.6	52.3	11.9		9.7	37.3	6.6		8.0	22.1	16.6	A
9.2	51.3	56.3		9.8	37 43.1	0.1		9.8	52.8	13.9		9.7	39.6	24.3		10	27 59.9	22.1	
8.8	21 57.0	33.0		10	51.4	54.2		9.3	55 19.5	15.3		9.4	11 12.1	51.1		7.3	28 5.9	20.9	A
8.8	58.0	33.6		9.9	57.8	13.0		8.8	29.6	52.3		8.5	14.9	1.2	A	7.0	9.4	1.6	A
9.8	58.5	38.5		9.4	59.9	33.2		8.5	54.1	28.5		9.5	51.4	11.3		9.0	39.4	28.6	A

3501—3560					3561—3620					3621—3680					3681—3740					3741—3800				
	12h		−16°			12h—13h		−16°			13h		−16°			13h		−16°			13h		−16°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.4	28	47.8	36.2	A	9.9	46	7.9	57.1		9.8	6	31.1	50.9		9.3	24	1.5	41.1		9.7	38	33.2	18.8	
9.7	29	49.4	59.8		9.8		36.8	3.9		10		32.2	5.9		9.0		14.8	48.9		9.5		42.7	53.7	
9.6	30	2.3	27.7	A	9.4	47	48.0	43.5	A	10		40.0	56.8		9.6		29.2	32.8		9.8	39	7.3	47.2	
9.2		20.2	9.9		9.6		56.5	20.4		9.0		53.5	59.2		8.6		30.8	13.6	B	8.3		24.8	20.6	A
9.6		29.0	11.9		8.0	48	28.7	6.3	B	9.4	7	1.7	25.0		9.3	25	10.0	59.6		10		37.2	54.0	
9.7		55.7	54.3	A	9.3		33.5	53.7	A	9.7		33.7	14.9		9.7		20.9	19.5		9.4		52.7	51.3	A
10		59.3	13.7		9.9		42.2	22.7		8.3		37.4	42.4	B	9.6		24.0	58.0		8.6	41	0.6	15.5	
9.8	31	1.2	50.6		9.4		54.3	22.3	A	9.6	8	2.9	29.4		9.5		25.2	6.5		8.9		3.8	44.4	A
9.4		19.3	50.5	A	9.5	49	4.6	15.0	A	9.6		4.6	16.7		10		25.9	10.2		10		46.9	21.0	
9.8		47.3	11.3		9.6		10.6	15.9		9.8		28.5	43.7		9.7		33.7	41.1		9.2		52.8	2.2	
10		57.9	8.0		9.6		18.8	40.1		9.2	10	3.1	25.8		10		44.5	35.5		9.0	42	12.7	18.4	
8.3		58.3	19.2		8.2		57.4	36.3	B	9.4		15.2	54.8		9.7		49.9	38.8		9.6		19.3	50.5	
8.6	32	25.6	52.7	A	9.4	50	20.9	54.0		9.2		17.6	4.5	A	9.7		52.7	37.1		9.7		25.3	46.2	
8.9		35.0	54.8	A	8.7		47.9	32.9	B	9.7		35.8	19.8		9.3	26	18.8	20.7		10		55.8	11.6	
9.5		43.7	49.4		9.6	51	12.1	56.7		7.2	11	0.8	22.0	A	10		19.3	38.2		9.7		58.9	49.6	
10		49.5	36.6		8.7		20.2	56.0	A	9.8		3.0	13.8		8.6		23.6	19.7	A	9.4	44	33.1	12.6	
9.0		57.5	16.0		9.4		26.6	33.8		9.7		37.1	34.9		8.6		37.5	36.0	A	9.6		33.4	39.3	
9.9	33	7.4	56.6		9.7	52	14.5	20.9		9.2	12	4.3	11.0	A	10	27	6.7	16.7		9.1	45	6.1	57.3	
10		10.8	43.7		9.8		47.9	15.3		10		14.1	1.6		9.5		12.0	33.7		9.6		16.7	56.1	
9.7		57.1	30.9		9.4		56.7	42.5		10	13	4.4	20.4		9.5		12.1	35.7		7.0	46	29.1	27.8	A
10	34	2.1	16.9		9.8	53	36.3	56.4		10		16.9	22.3		9.7		16.2	28.3		9.5		39.2	45.2	
9.0	35	10.7	47.2		9.0		41.2	37.9		9.8		28.2	28.8		9.0		39.5	6.2		10		39.5	40.6	
9.1		18.9	56.6		9.4		42.6	46.5		9.2		29.8	24.0		9.3		40.9	17.7		9.0	47	59.4	5.0	A
9.1		32.2	12.0		9.5		48.5	4.5		9.6	14	15.5	2.5		8.0		43.2	10.7	A	9.3	48	0.9	31.0	
9.8		45.6	9.9		10	54	1.3	59.1		9.5		22.4	36.7		9.3	28	44.3	40.5		9.7		55.3	33.3	
9.5	36	59.5	31.1		9.8		32.6	42.0		9.0		46.2	23.3		9.8		44.6	25.8		9.7	49	15.6	35.4	
7.4	37	6.8	58.8	A	9.4		40.4	29.5		10		51.9	9.2		8.9	29	14.2	19.0	A	8.5		20.4	20.5	A
10		56.3	32.1		7.5	55	17.5	5.8	B	9.5	15	4.8	22.0		9.0		22.5	34.3		9.4		25.8	17.6	
9.4	38	13.2	37.1		8.9		51.8	28.8		10		11.7	54.6		9.5		23.9	55.2		9.6		45.2	18.0	
10		19.5	13.3		9.0	56	4.3	59.4		5.3		15.0	57.8	L	10	30	8.1	1.8		9.3		48.5	34.9	
9.8		27.2	19.2		8.4		21.0	50.4	WC	8.8		58.7	14.9		9.8		15.4	12.5		9.0		52.4	37.3	A
10		37.1	46.1		7.8		39.9	26.9		9.0	16	20.2	22.6		9.7		44.6	43.9		9.1	50	18.4	24.1	A
9.3	39	50.4	27.5		9.8		44.2	15.2		10	17	6.4	28.5		9.2		47.5	56.2		8.7		36.0	54.8	A
9.0	40	28.3	34.5		10	57	7.4	14.1		10		21.2	55.0		9.6	31	15.4	20.5		9.1	51	2.3	55.2	A
9.0		29.6	22.2		9.5		15.3	28.3		9.1		40.0	51.6		9.3		27.1	43.6		9.8		27.3	20.3	
9.2		53.0	57.8		8.2		21.7	53.8	A	9.2		50.0	20.4		9.8		46.3	38.7		10	52	18.6	28.1	
9.5	41	23.0	55.1		8.2		46.6	13.3	M	9.5		50.1	49.4		8.5	32	24.1	44.5	A	9.4		29.6	51.1	
9.7		45.3	29.8		9.7		47.2	56.5		7.0	18	19.8	6.3	B	8.0		43.8	36.2	A	9.3		40.9	22.9	
10		45.8	16.8		9.3	58	45.3	49.9		10		36.5	52.9		9.5	33	3.4	2.6		9.4		49.6	28.6	
8.9		47.9	24.1	B	9.1		54.9	41.0		9.5		46.4	11.8		9.4		6.7	59.6		9.5	53	0.7	35.5	
8.5		49.4	21.2	B	9.4	59	11.3	48.1		9.7		51.0	53.1		9.4		40.8	0.0		9.5		41.4	16.4	
9.6	42	32.8	41.6		8.8		42.2	18.1		9.9		51.9	56.3		9.8		49.9	37.4		10		56.3	38.1	
9.9		37.9	36.2		10	0	21.8	7.9		9.8		52.2	37.4		8.2		51.0	35.0	A	9.8	54	15.4	32.9	
9.6	43	8.5	59.4		9.2		47.4	40.1	A	9.6		57.0	29.8		9.0		57.4	4.0	A	9.0		43.5	39.2	A
9.8		17.7	4.8		8.2	1	22.6	54.0	B	9.5	19	16.6	59.2		8.3		57.5	49.0	A	7.0	55	10.4	39.7	A
8.6		26.4	32.5	A	9.4		43.9	58.1		8.6		30.7	22.3	A	9.8	34	25.2	17.0		8.9		13.9	54.2	A
9.8		32.6	15.1		8.0		45.4	27.4	A	9.2	20	10.5	24.3	A	9.7		32.8	11.8		9.1		18.5	52.2	A
8.4		43.5	7.4	A	9.5		48.9	1.7		8.8		50.2	15.4	A	9.1		44.1	24.4		9.4		25.5	27.8	
9.3		48.9	49.7	A	9.8	2	33.8	22.0		9.7		51.5	47.3		8.6		45.3	32.2	A	9.3		31.2	30.0	
9.9		53.5	59.4		9.4	3	8.3	28.5		9.8	21	0.0	46.7		9.8		54.7	58.2		9.5		42.6	35.7	
9.8	44	3.2	22.0		9.8		19.6	14.8		9.7		3.5	24.1		9.5	35	0.3	21.4		9.1	56	38.5	25.1	A
9.8		15.0	59.8		7.2		22.8	18.9	B	10		7.3	4.8		9.0		41.0	18.6	A	9.3		41.2	19.0	A
9.5		22.3	28.7		8.9		31.2	22.3	B	9.8	22	11.7	55.6		10	36	14.3	26.0		10	57	7.6	52.3	
9.1		47.8	49.7	A	9.6		57.8	40.6		9.7		32.5	16.1		10		25.9	24.9		10		41.8	53.1	
9.4	45	11.3	46.4	A	9.2	4	9.9	23.7		10		33.4	38.2		9.1		33.8	28.7		9.3		43.9	11.4	
9.5		26.6	36.8		9.5		12.4	47.5		10	23	5.5	31.9		9.0		41.0	7.4	A	9.8	58	1.3	35.9	
8.5		34.8	24.5	A	9.5		24.8	51.6		10		6.0	21.7		8.6		52.9	59.0	A	9.8		3.0	6.5	
8.8		58.3	2.6		9.5	5	48.3	0.4		10		30.5	19.4		8.9	37	31.3	30.2	B	8.5		14.9	49.5	A
9.4	46	4.3	6.2		9.2		49.5	27.2		9.7		47.8	22.9		9.5		42.8	50.6		9.0		20.4	59.5	
9.0		7.3	24.1	A	9.0	6	21.7	39.3		10		57.3	49.1		10		57.7	9.7		9.8		25.5	26.1	

3801—3860				3861—3920				3921—3980				3981—4040				4041—4100			
	13h—14h	—16°			14h	—16°			14h	—16°			14h—15h	—16°			15h	—16°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	58 32.5	25.2		10	16 30.6	34.7		9.4	34 38.6	30.4		9.2	52 5.8	11.6		10	7 47.6	1.5	
8.2	37.5	45.5	A	10	52.3	15.9		9.3	46.1	41.1		9.2	10.6	26.9		9.5	8 0.6	39.0	
9.8	51.1	55.2		9.5	58.3	26.1		9.0	59.0	2.1	A	10	33.1	55.7		9.5	24.0	49.3	
9.4	54.1	20.9		9.8	17 20.0	16.4		9.2	35 0.6	41.6	A	9.2	46.5	32.0		9.5	37.1	36.6	
9.4	59 8.8	1.4		10	29.8	17.3		9.2	36.9	54.3		9.2	54.9	50.6		9.5	9 18.0	42.2	
10	11.7	35.5		9.4	18 34.0	28.4		9.5	36 11.3	18.9		8.6	53 17.6	18.6	A	9.5	19.9	59.9	
9.2	14.8	19.3		8.3	58.0	59.7	A	9.5	13.5	34.0		8.9	22.0	27.3	A	9.5	22.1	19.5	
9.8	24.3	14.8		9.8	19 9.8	51.7		9.8	25.0	41.8		9.6	54 2.4	58.6		9.5	22.9	39.3	
10	0 21.8	58.5		9.3	17.3	0.1		8.0	26.1	15.2	A	9.1	38.4	31.0		8.8	30.6	39.7	
9.7	51.5	51.9		9.9	40.5	43.2		9.4	26.7	8.1		10	44.2	47.9		10	42.8	40.4	
9.2	1 0.4	19.3		9.6	47.4	54.9		10	40.8	38.9		9.2	55 5.7	51.1		9.7	57.1	26.6	
9.8	22.9	20.6		8.5	20 12.9	38.3	B	9.5	45.9	39.3		7.8	27.9	1.4	A	10	58.6	21.7	
9.5	25.0	44.0		8.2	42.5	18.7	B	10	48.9	59.8		9.3	56 5.1	6.0		9.7	10 12.5	51.4	
10	26.2	32.1		8.9	44.6	55.6	A	8.0	37 33.4	7.5	B	9.7	8.0	59.3		9.9	21.1	37.8	
10	45.7	28.2		8.2	45.7	24.9	A	10	55.6	51.3		9.7	27.5	59.5		9.4	26.8	3.9	
10	2 16.6	11.2		9.0	48.1	52.0	A	8.5	57.0	15.2		9.1	29.5	10.8		9.5	11 22.2	24.1	
9.8	17.7	12.4		9.4	21 3.5	23.1		9.8	38 12.1	10.5		9.5	29.9	20.9		9.6	32.9	43.3	
9.4	20.6	15.4		8.5	18.6	28.0	A	8.8	38.2	55.0	A	9.8	50.8	7.8		9.8	43.0	43.6	
9.5	35.9	23.0		9.8	40.6	28.0		7.0	40 26.6	43.4	B	9.5	57 14.9	25.0		9.2	46.7	8.2	
9.1	41.8	19.7		9.2	47.0	53.5		9.1	31.3	25.3	A	9.3	18.7	10.1		9.5	12 2.2	6.0	
8.9	57.6	57.4	B	9.6	22 25.0	11.9		9.8	47.6	56.9		9.8	34.3	6.3		9.1	27.9	51.1	
8.2	3 18.0	20.2	A	9.2	55.2	9.9	A	8.7	54.5	24.1	A	9.0	59.9	21.4	A	10	43.4	59.2	
9.2	20.2	7.4		9.8	23 0.1	26.4		9.1	41 0.0	19.2		9.3	58 2.7	9.0		9.8	59.0	22.3	
9.6	4 9.5	36.9		9.1	15.3	16.9	A	9.8	0.2	5.8		9.0	20.4	30.1	A	10	13 0.7	35.9	
10	34.7	38.5		9.0	31.7	21.9		9.5	29.8	57.3		9.4	38.6	44.1		10	21.5	15.9	
9.7	36.5	10.0		9.0	33.3	9.2	A	9.7	42 30.7	37.2		9.4	50.3	45.8		10	30.1	18.8	
9.2	58.4	5.3	A	9.7	57.2	9.8		9.0	48.3	16.0	A	9.1	59 20.3	48.0	A	9.0	14 32.0	22.5	
9.7	5 30.8	16.3		9.7	24 54.8	46.3		9.3	58.0	25.0		9.4	30.8	15.6		9.4	15 12.4	42.3	
8.1	6 14.6	47.0	B	9.6	56.9	11.5		8.6	43 14.0	23.2		9.1	37.7	49.8	A	9.4	21.2	1.5	
9.8	37.8	41.2		9.5	25 6.4	57.5		9.0	24.0	23.0		9.8	38.5	41.5		7.5	22.6	2.6	B
9.8	7 11.0	28.3		9.3	41.1	39.3		9.4	42.8	41.3		9.3	54.8	12.4		9.5	27.3	12.3	
9.4	36.7	22.2		7.2	26 2.5	10.8	A	9.0	43.3	42.8		8.3	0 7.4	31.7	A	9.0	44.9	9.5	
9.5	8 8.7	22.0		9.7	3.1	53.0		8.3	56.8	54.3	B	9.5	9.4	25.0		9.5	16 7.6	58.6	
9.8	9 4.1	15.2		8.8	9.7	55.5	A	9.4	44 23.3	36.0		9.8	48.9	23.9		9.0	7.9	47.7	
10	20.6	4.9		9.8	27 4.2	9.0		9.0	46.1	12.6		9.9	50.1	0.5		9.8	16.6	25.7	
9.8	21.2	23.0		9.3	4.2	34.5		9.7	56.3	59.1		10	1 1.7	9.0		8.0	18.9	28.5	A
9.8	29.4	9.7		9.5	31.5	27.2		9.4	58.8	22.0		8.8	28.6	50.5	A	10	22.4	27.3	
9.6	10 2.7	5.0		9.8	42.1	22.7		8.9	45 39.2	19.8		9.3	2 5.8	32.6		9.4	17 9.8	34.5	
9.5	11 15.5	50.4		9.4	43.0	37.9		9.4	39.7	50.6		9.5	43.7	46.1		8.7	15.9	34.7	A
8.8	50.4	9.4		9.5	28 18.8	56.9		9.5	49.3	17.9		7.8	3 3.6	24.6	B	9.5	43.6	14.9	
9.5	59.6	51.6		9.3	24.3	33.0		9.1	55.5	49.4		10	20.4	7.2		9.5	45.8	53.0	
9.8	12 18.1	3.3		9.4	36.9	8.4		9.4	46 17.4	16.8		9.3	28.5	15.4		9.3	18 2.4	39.0	
7.7	29.4	51.3	A	9.8	48.7	36.3		10	20.0	34.8		10	32.6	10.4		9.5	18.6	23.7	
8.2	54.1	48.3	A	10	29 52.6	15.6		9.1	47 11.3	51.0		9.6	40.0	7.3		9.4	19.2	33.3	
8.9	13 4.2	12.8		10	56.9	50.7		9.2	27.9	13.1	A	7.7	44.9	3.5	B	9.4	23.4	31.0	A
9.9	21.7	33.8		9.3	30 25.3	15.0		9.1	41.4	54.8		9.5	47.3	22.2		9.1	24.9	34.6	A
8.9	27.8	19.4	A	9.8	31.4	55.4		9.2	43.1	8.1	A	9.4	4 6.4	5.8		9.0	19 34.3	38.9	A
9.1	42.0	20.8		9.3	32.1	39.5		9.3	48 8.1	30.8		9.3	27.3	21.3		9.4	20 0.3	34.4	
9.2	14 5.9	28.8		9.6	46.8	30.6		9.2	9.3	53.3		9.2	40.7	35.4	B	6.0	5.2	12.4	A
9.5	16.6	56.1		9.5	48.6	43.1		7.0	14.5	12.5	A	9.8	55.5	10.0		9.2	7.7	25.2	
9.8	34.2	56.6		9.5	31 24.5	57.0		9.2	49 5.2	15.9		10	5 5.7	2.4		9.5	58.3	53.0	
9.9	52.4	10.5		9.3	34.6	13.6		6.8	50 0.1	46.4	B	9.5	7.6	48.2		9.4	21 14.9	59.8	
9.3	56.2	36.0		9.5	35.4	17.9		8.6	13.9	39.2	B	10	16.0	33.3		7.0	23.3	56.2	L
9.4	59.3	38.2		8.6	56.3	48.9	A	9.6	16.0	57.4		8.7	54.7	47.5	A	9.1	27.4	23.1	A
10	59.9	28.5		10	33 12.0	15.9		9.8	51.2	30.9		8.5	6 0.7	58.2	A	8.6	32.8	20.2	A
8.7	15 1.1	49.7	B	10	30.0	14.6		9.1	51 22.1	15.1		9.1	4.9	20.6		9.9	54.8	57.3	
9.8	24.8	36.5		8.9	45.7	39.1	A	9.8	36.0	25.3		9.2	47.2	12.4		8.5	22 0.2	45.3	A
9.5	53.5	5.8		9.4	34 19.2	12.0	A	10	53.0	53.1		9.6	7 17.6	32.5		9.6	4.3	15.2	B
9.8	54.7	57.3		9.1	19.6	41.8	A	9.3	53.4	28.6		9.0	26.2	23.8	A	6.5	30.0	6.4	A
10	16 17.4	25.5		9.6	36.6	55.2		9.3	54.6	17.1		9.3	29.6	45.2		9.8	33.3	52.2	

4097: $21^m59^s.38\ 45'5''.1$ B_4, Ep. 1873.42

4101—4160				4161—4220				4221—4280				4281—4340				4341—4400			
	15h	−16°			15h	−16°			15h—16h	−16°			16h	−16°			16h	−16°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	23 5.2	47.5		9.4	40 35.0	13.3		9.5	59 32.7	24.5		9.5	14 48.3	28.3		9.5	36 58.6	24.1	
9.3	17.2	53.3		9.8	41 7.7	57.1		8.3	59.5	45.0	B	9.5	15 6.3	34.7		9.5	37 6.6	21.8	
9.1	27.2	48.4		9.5	30.1	27.0		9.2	0 1.8	54.1		9.1	30.4	24.0		8.7	10.6	10.7	A
8.3	28.1	31.6		8.2	42 12.2	54.1	A	9.6	11.7	21.5		9.3	49.2	22.2		8.4	44.5	37.9	A
9.2	57.6	1.9		9.5	23.0	48.4		9.5	22.8	58.8		9.3	16 50.3	10.9		9.5	38 3.4	58.7	
9.7	24 7.5	22.1		8.9	49.8	33.6	A	9.7	34.2	18.3		9.1	19 1.5	2.4		9.1	12.1	19.2	
9.7	12.2	21.8		9.8	43 24.8	33.0		9.5	52.6	24.8		9.7	58.4	22.7		9.0	16.2	37.4	A
9.4	39.8	40.9		9.4	44 5.1	58.6		8.8	1 6.4	57.6	A	8.8	20 35.6	50.8		9.5	39 18.5	41.6	
9.9	44.1	56.1		8.5	7.0	47.6	A	9.1	8.0	52.3	A	9.3	41.5	4.2		9.8	31.4	48.0	
6.3	44.6	21.2	A	9.3	24.5	0.8		7.8	13.5	47.9	A	9.5	21 4.7	37.5		7.8	40 10.0	3.5	B
8.3	48.7	44.7		9.4	36.6	15.3		9.8	15.6	30.2		9.4	36.7	17.0		9.6	35.9	31.9	
8.2	25 45.8	29.8	A	9.4	53.5	8.2		9.6	23.7	17.5		9.4	37.1	31.7		9.8	43.0	26.0	
8.3	46.5	58.2	A	9.3	45 12.8	20.3		9.8	33.8	23.3		9.1	53.2	40.4		7.9	41 2.5	30.8	A
7.5	26 47.6	39.0	A	4.8	34.4	17.9	A	9.0	34.5	40.0		9.3	22 3.1	15.1		8.6	8.4	9.4	A
9.6	53.7	27.6		9.7	38.4	51.2		9.5	48.4	58.7		9.2	9.3	18.5		9.5	35.3	50.2	
8.8	27 15.1	55.0	A	9.3	46 42.3	31.6		9.5	2 21.6	36.1		9.9	29.4	23.2		9.5	53.2	45.7	
9.5	44.8	10.7		9.0	47 12.7	49.5	WC	9.5	3 3.9	48.1		10	46.2	16.4		9.8	55.2	10.6	
9.8	28 0.2	27.0		9.0	48 6.0	19.9		9.3	13.9	54.4		5.0	50.7	17.1	A	10	42 22.1	18.8	
9.5	14.9	25.6		8.8	22.7	14.6	A	9.8	29.7	11.1		9.2	55.7	50.5		9.0	22.3	55.9	A
8.0	25.1	31.7	A	8.8	25.4	24.1	A	10	37.0	43.7		9.7	59.8	34.7		6.9	35.5	17.3	A
9.1	50.2	29.8		9.5	52.4	7.9		10	37.9	45.7		9.4	23 9.5	55.6		9.8	51.6	30.2	
9.0	29 0.2	45.7		9.4	49 26.3	26.4		9.0	44.6	25.6		9.5	30.2	53.2		9.8	43 37.0	20.1	
8.3	28.4	15.1	A	8.5	27.1	23.5	A	9.2	56.7	18.1		9.3	54.6	46.2		9.2	37.3	15.9	
9.4	58.6	4.1		9.3	29.2	33.6		9.1	4 6.4	58.5		9.5	24 48.7	38.2		9.1	44 46.8	46.2	
9.2	30 18.7	3.6		7.8	42.8	39.5	A	9.6	19.5	45.0		9.8	25 1.1	42.5		9.5	45 44.3	55.5	
9.6	25.0	1.1		9.7	51.2	22.4		9.5	24.6	22.8		9.6	47.2	19.3		9.1	45.8	9.8	A
9.4	25.6	19.5		9.7	56.5	10.8		9.5	25.3	2.0		var	55.0	51.1	B	9.7	46 31.8	57.3	
10	44.2	16.3		9.4	50 2.8	31.1		9.6	25.5	26.6		9.0	26 17.2	36.7		9.7	45.0	12.9	
9.0	48.6	35.5		9.0	3.7	58.8	A	9.2	5 32.0	38.3		9.5	45.2	25.6		9.2	47 11.0	52.8	
9.9	31 5.1	40.7		9.8	24.8	48.1		9.2	44.4	38.9		9.4	49.1	40.3		9.5	21.4	27.5	
9.2	6.3	6.9		9.5	36.9	26.0		8.3	48.1	1.4	A	9.5	51.5	50.4		6.2	39.9	34.1	A
9.8	11.1	24.1		9.8	58.4	20.9		8.5	6 0.8	9.9	A	9.9	51.6	11.9		9.8	48 7.0	41.2	
10	20.1	40.8		8.5	51 1.8	51.7	A	9.5	23.1	21.9		9.4	27 51.2	43.0		9.6	37.9	22.0	
9.3	47.0	54.5		9.6	12.4	45.4		9.5	7 23.7	36.3		9.3	55.3	53.5		9.5	43.9	50.6	
8.2	32 29.3	16.5	A	9.8	52 9.0	45.4		9.9	49.0	33.8		8.3	28 40.0	51.5	A	9.8	54.3	48.0	
9.5	30.1	31.0		6.2	10.9	6.0	A	9.5	57.8	55.5		9.0	29 16.7	4.6		9.5	58.8	47.5	
9.2	35.5	37.0		8.8	15.6	14.3		9.1	8 21.1	41.9		8.0	17.1	33.1	A	9.5	49 12.7	2.7	
9.2	39.7	49.7	A	9.3	27.2	30.6		8.9	25.1	9.3	A	9.6	27.0	3.0		9.3	15.7	48.8	
9.3	46.7	9.4		9.5	29.5	54.5		9.8	9 39.1	21.1		9.5	39.5	48.5		9.9	19.4	43.3	
9.3	33 7.0	13.9		9.4	53 6.4	1.3		9.3	42.5	11.8		9.5	52.2	5.3		9.8	35.3	15.6	
10	20.4	47.2		9.4	32.7	27.2		9.8	43.3	4.0		10	30 45.1	29.7		9.8	48.9	21.1	
9.3	43.6	10.2		9.4	54 20.6	20.7		9.3	44.9	35.6		9.8	46.9	33.7		9.5	55.8	35.9	
9.3	44.3	27.1		9.1	55 5.6	46.2	A	9.5	57.4	38.5		9.7	51.7	2.6		9.5	50 28.3	41.5	
9.0	57.4	54.4	A	9.5	27.7	41.7		9.5	10 13.2	55.5		9.5	31 7.6	18.7		9.3	32.2	49.0	
9.5	34 1.9	58.5		9.5	54.7	41.9		8.5	26.5	4.7	A	7.7	29.2	19.4	A	9.7	43.2	18.7	
9.8	9.1	12.9		9.5	55.3	10.4		9.3	47.9	37.0		8.9	32 33.6	4.9		7.8	56.3	40.4	A
9.5	25.0	31.1		10	56 22.8	19.6		9.1	50.9	39.7	A	8.0	33 13.5	38.7	A	9.6	51 16.3	55.9	
9.6	50.6	58.3		10	26.1	22.3		9.0	11 17.4	33.4	A	8.5	31.6	4.5	A	9.5	25.3	29.5	
9.3	35 20.3	12.7		8.8	28.3	29.2		8.5	24.0	7.4	A	9.7	33.4	32.5		8.3	46.9	25.2	A
9.3	39.0	29.2		9.5	29.1	40.0		9.9	44.3	53.8		9.6	39.0	54.5		9.4	51.9	25.7	
7.0	44.1	24.3	A	9.2	32.0	40.3		10	46.0	18.6		9.6	51.7	12.2		9.5	52 13.9	21.6	
10	56.4	1.9		9.6	44.7	36.9		9.5	12 6.8	54.7		8.5	58.5	44.8	A	9.8	17.3	33.7	
9.5	36 5.0	52.9		9.3	50.3	13.9		8.2	15.8	44.2	A	9.2	59.1	21.4		9.3	53 22.9	13.8	
8.7	46.5	15.5		9.3	57 37.2	23.2		9.3	25.0	35.2		9.2	34 32.9	16.3		9.3	31.5	10.6	
7.3	37 37.4	29.4	A	9.1	53.3	12.0		9.6	13 53.8	36.1		9.9	48.4	25.5		9.8	45.7	9.9	
9.6	42.9	14.7		9.4	58.2	54.7		9.6	14 13.8	30.9		9.5	48.7	12.8		9.4	54.7	9.9	A
7.5	38 37.9	39.4	A	9.6	58 23.7	36.9		9.8	23.6	6.8		10	52.0	33.2		9.2	54 25.8	36.5	
9.1	40.7	8.1		9.2	27.3	9.1		9.5	26.4	28.6		9.5	35 43.0	39.0		8.6	54.7	20.9	
9.8	39 7.4	41.4		7.3	48.6	33.1	A	8.5	31.5	48.2	A	9.5	49.4	49.1		9.5	55.3	15.1	
8.5	58.1	8.9	A	9.0	59 27.3	6.8		6.8	33.8	40.0	B	10	56.0	12.2		9.4	58.7	45.4	

4401—4460				4461—4520				4521—4580				4581—4640				4641—4700			
16h—17h		—16°		17h		—16°		17h		—16°		17h		—16°		17h		—16°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.5	55	0.1	35.2	9.0	7	50.1	5.2	9.1	19	41.5	41.6	9.8	30	34.1	23.9	9.8	44	5.0	5.6
9.4		7.2	11.0	9.5	8	3.6	38.1	9.6		44.2	15.7	10	31	16.2	13.5	9.4		11.3	25.0
9.6		8.6	4.5	9.0		18.5	59.2	9.8		59.5	23.9	9.3		55.3	57.4	9.5		16.7	23.3
9.2		20.5	40.3	8.9		24.7	2.6 A	9.4	20	19.9	54.3	9.8	32	8.2	42.4	9.1		20.9	15.0
9.2		20.5	27.8	9.1		27.0	20.0	9.5		47.6	18.8	9.8		8.6	48.4	9.8		27.0	59.6
9.4		50.8	5.0	8.6		32.6	23.1 A	8.4		56.1	28.4	9.8		21.9	24.0	9.5		54.5	4.9
9.8	56	2.9	36.3	9.8	9	51.5	39.7	9.3		57.0	40.1	9.6		43.4	11.9	9.0		56.4	20.0
9.5		7.8	34.7	9.0		52.1	31.1 A	10	21	9.7	51.8	9.8		47.6	40.4	9.8	45	17.3	23.1
9.7		10.7	18.0	9.8		55.0	19.5	9.1		33.0	57.5	10		47.8	15.7	9.4		36.7	45.7
8.9		10.8	33.4	6.5		57.6	9.0 A	9.8		44.4	26.3	9.5	33	42.1	13.2	9.5		40.9	16.6
9.1		10.8	19.4 A	8.8	10	4.7	2.2 A	9.6		51.8	8.7	9.0		42.8	58.1 A	9.6		48.0	17.5
8.8		18.2	38.9	9.2		12.3	12.8	10	22	6.1	52.9	9.1		43.1	25.3 B	9.8	46	25.8	56.5
9.8	57	3.6	22.8	10		36.2	3.5	9.9		8.2	56.1	9.4		50.9	10.4	9.4		44.0	18.0 A
9.6		24.2	30.6	9.8	11	7.0	18.7	9.7		13.8	56.0	9.8	34	24.3	34.7	9.5	47	24.9	7.2
9.5	58	17.3	11.3	9.4		10.8	59.6	9.5		25.9	34.1	9.8		34.1	13.5	9.4		25.1	12.1
8.9		34.5	14.6 A	9.8		25.6	23.0	9.2		32.6	2.9	9.7		51.8	50.8	9.0		27.8	43.0 M
9.0		36.6	31.0	8.7		32.6	6.2 A	9.1		35.5	2.9 A	9.5		55.2	53.7	9.4		35.8	22.2
9.7		39.4	18.5	8.5		41.6	32.0	9.4		53.7	38.3	9.4		56.1	7.3	9.4		49.7	12.9
9.5		43.2	21.2	9.8		43.1	25.3	9.7		56.5	38.7	8.3	35	8.3	44.1 A	10	48	1.2	56.9
9.0		46.8	11.7 A	9.0	12	9.6	45.9 A	9.6		57.7	23.3	9.9		8.9	42.5	9.7		11.7	23.6
9.3	59	57.2	20.6	9.2		17.0	31.8	9.5	23	36.4	41.2	9.8		45.8	12.9	8.8		21.9	31.2 M
8.2	0	2.6	51.1 A	9.5		32.9	47.5	10	24	2.3	16.7	9.1		54.4	15.8	8.5		50.2	37.9 M
9.2		37.1	49.0	9.4	13	3.6	51.0 A	9.7		2.4	57.9	7.0		56.0	47.5 A	9.6		52.0	18.1
9.5		37.7	38.5	9.8		14.1	40.3	9.8		8.8	3.8	9.4		58.6	13.5	9.2		54.1	6.9
7.7		38.4	42.3 A	9.5		33.0	3.3	9.1		10.0	32.0	9.5		58.7	0.2	9.8	49	2.8	20.7
8.0	1	29.6	6.9 A	9.8		46.5	30.2	9.8		17.7	7.1	9.7	36	4.3	37.0	9.3		5.2	38.4
9.5		43.2	47.0	9.6		47.0	46.2	9.8		18.7	28.2	9.0		14.9	42.3 A	8.7		25.9	46.2 M
9.3		53.7	36.1	9.5		53.1	0.8	9.1		22.9	43.0	9.5		17.4	22.7	9.4		40.6	45.5
9.5	2	11.1	5.2	9.4		58.7	46.0	9.3		50.4	30.3	9.7		25.4	13.8	9.5		56.0	3.4 A
9.3		23.2	54.3	9.5	14	18.5	12.7	9.0		54.5	2.5 M	8.0		35.8	41.7 A	9.5	50	17.9	27.5
9.0		25.1	10.6	9.8		28.5	5.5	9.1	25	2.7	26.4	9.6	37	22.9	7.6	7.0		18.4	49.9 A
9.1		29.9	1.2	9.7		36.0	25.1	9.8	26	14.9	58.3	9.5		36.8	53.8	9.5		22.3	12.0
9.5		38.7	3.4	9.5		36.8	16.7	9.3		19.4	31.7	8.0		47.1	31.7 A	8.9		36.7	18.7 A
7.5		40.0	27.0 A	9.8		39.1	29.1	8.5		24.4	31.3 A	9.0	38	19.9	53.2	9.5	51	1.9	6.2
9.5	3	1.0	56.3	9.1		54.8	31.7	9.4		34.9	32.6	9.8		21.3	37.9	9.8		5.7	30.0
7.3		7.3	18.1 A	9.3		59.1	20.0	9.9		36.8	39.5	9.8	39	31.2	47.6	9.6		14.6	13.5
9.4		20.5	43.0	9.5	15	14.4	42.0	8.9		44.0	5.7 M	9.4		53.0	17.3	9.7		21.8	21.5
9.3		47.2	27.0	9.4		28.4	31.3	9.8	27	0.3	50.3	9.8		55.5	17.6	7.3		51.4	3.1 A
9.2		52.0	33.7	9.6		35.1	27.7	9.0		43.1	20.2 A	9.7		58.2	24.7	9.1		59.7	30.7
9.8		55.1	31.3	9.7		36.3	22.4	9.8		44.1	0.2	7.8	40	1.8	46.3 B	9.6	52	33.8	7.7
9.3	4	9.5	53.6	9.6	16	8.3	15.0	9.8	28	3.3	46.3	9.5		7.4	11.4	9.5		40.5	13.0
9.5		9.5	1.0	8.9		23.4	24.6	9.4		4.6	31.8	8.3		38.8	11.7 A	9.8		47.2	28.4
8.2		37.2	20.0 A	8.5		27.1	1.3 A	9.0		7.9	5.7 A	10	41	11.9	6.3	9.5		52.6	52.9
9.1		44.0	45.7	9.5		31.5	1.3	9.0		10.8	31.8	9.0		22.0	6.7 A	9.8		52.6	1.9
9.4		48.7	10.6	9.4		43.4	34.9	9.7		14.9	31.6	10		26.8	9.3	9.8		53.1	6.0
9.4	5	0.2	14.0	8.9	17	7.0	31.6	9.5		35.8	28.9	9.8		29.8	35.9	9.8	53	3.8	46.6
9.6		1.9	18.2	9.8		11.0	28.0	9.0		41.9	30.5	9.0	42	0.3	25.5	8.0		18.8	25.9 M
9.6		11.8	37.5	9.0		13.3	18.9	8.8		51.6	37.6	9.5		8.4	31.6	9.5		21.6	49.2
9.0		25.9	3.9	9.4		44.3	20.3	9.0	29	20.6	16.4	8.0		21.4	6.2 A	9.5		31.9	12.0
10		33.8	54.6	9.5		44.4	44.1	9.4		23.9	54.8	9.0		36.9	41.9	8.0		48.2	12.8 B
9.6	6	4.0	57.1	9.1		47.5	9.9	9.4		25.8	15.9	8.8		56.3	21.8 M	9.9		52.5	40.1
9.7		38.1	12.0	8.2		48.4	56.8 B	9.6		50.7	21.8	9.8	43	17.0	5.9	9.1	54	1.9	58.3
9.4		53.0	34.0	9.4		52.9	24.3	9.8		51.7	13.4	9.4		23.7	21.8	9.5		14.9	8.3
9.7		58.6	58.9	9.0	18	2.5	2.1 A	9.4	30	0.6	27.4	9.6		32.9	56.9	9.8		37.8	20.5
9.7	7	11.6	42.1	9.8		6.7	49.4	9.1		1.1	12.2	9.3		39.2	47.2	9.5	55	1.3	18.6
10		24.7	4.5	9.7		24.7	58.8	9.8		6.3	34.0	9.1		42.2	14.2	9.5		20.2	47.5
9.5		25.9	5.8	10		36.3	9.5	9.6		21.9	14.2	8.0		42.5	44.5 A	9.3		31.4	56.5 A
9.5		29.5	22.5	9.4		59.4	15.4	9.6		29.0	19.0	9.4		55.8	15.0 M	9.5		40.1	43.5
8.8		36.0	37.9 A	9.4	19	5.0	41.4	10		31.2	17.5	7.2		56.4	55.4 A	9.5		56.2	35.0
7.5		40.2	1.3 A	9.7		27.4	57.5	9.4		31.3	22.4	8.0		59.3	36.4 A	9.8		56.8	40.6

4701—4760					4761—4820					4821—4880					4881—4940					4941—5000				
	17h—18h		−16°			18h		−16°			18h		−16°			18h		−16°			18h		−16°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.1	56	17.5	30.0		9.3	6	7.2	31.8		9.2	12	25.8	21.0		9.4	19	6.9	30.4		7.5	26	59.4	14.6	A
8.3		36.0	1.0	A	9.3		12.6	1.0		9.2		26.3	5.6	A	9.2		20.7	1.6		9.5	27	15.6	17.1	
9.2	57	1.4	5.2	A	9.3		14.6	20.3		10		29.4	0.9		9.2		21.5	32.0		9.4		17.2	2.4	
9.5		8.9	1.6		9.8		18.3	50.8		9.8		29.5	5.2		7.9		25.2	30.4	A	10		35.3	27.6	
9.4		12.0	43.8		9.8		27.5	27.8		9.8		30.5	6.1		9.6		41.3	19.0		9.5		37.3	32.0	
9.1		53.7	42.0	M	9.0		45.2	6.8	A	9.6		41.8	4.9		9.9		42.4	43.6		9.8		54.9	56.0	
9.0	58	18.6	56.1	A	9.0		45.8	4.0	A	9.5		44.5	8.3		9.0		51.8	7.0		9.8	28	9.6	58.0	
9.3		36.1	53.5		9.8		50.7	0.2		9.1		49.5	4.0	A	8.3	20	2.1	47.2	B	9.8		11.0	32.3	
9.8		40.2	27.7		9.1		52.1	51.0		8.7		52.2	26.2	M	9.5		8.8	23.3		9.5		13.4	51.0	
10		46.2	58.7		9.5		52.9	36.0		8.9		57.7	26.4	P	9.8		10.7	57.2		9.8		17.2	10.8	
9.0		48.7	40.0	A	7.3		57.1	52.0		10		58.3	3.4		9.7		18.4	38.2		9.3		18.0	45.0	
9.4	59	8.5	8.4		9.7		59.9	7.4		9.3	13	5.0	5.0		9.6		18.7	55.2		7.0		25.8	3.4	A
9.6		12.3	57.1		8.7	7	0.6	49.8		9.4		5.0	56.9		8.8		40.0	30.1	A	9.0		27.7	49.6	B
10		16.2	59.2		9.7		2.9	26.1		9.3		8.4	0.6		9.5		46.3	41.3		9.8		29.4	22.6	
10		19.5	15.7		9.4		3.8	59.6		9.5		12.8	16.3		9.2		51.6	51.8		8.5		34.4	24.2	A
8.8		23.2	3.1	A	9.2		14.0	16.4		7.8		26.5	23.0	A	9.2		52.5	38.6		8.7		47.4	22.6	A
9.8		26.6	42.7		9.4		27.2	3.9		9.1		28.7	39.8		9.5	21	1.9	38.6		9.3		50.7	9.0	A
9.0		34.7	37.8	A	9.4		38.1	2.9	M	9.5		34.6	35.0		9.5		11.0	1.2		9.5	29	8.5	25.8	
9.8		37.2	31.2		9.0		44.6	53.1	M	9.1		56.4	57.0	A	8.5		14.2	10.8	A	10		23.1	28.2	
8.0	0	6.4	25.6	A:	10		48.9	0.0		9.0	14	0.6	8.2	A	8.3		14.4	43.7	B	9.5		55.8	45.2	
8.9		6.5	30.3	A	9.0		50.1	50.1		9.2		4.1	36.8		9.5		15.3	33.7		9.3	30	10.2	15.4	
9.4		25.1	37.2		9.8		59.6	5.5		9.5		9.7	40.2		9.0		25.1	48.1		9.5		14.1	21.5	
9.5		41.9	29.6		9.9	8	4.6	47.0		9.7		11.3	15.5		8.2		46.9	17.0	A	7.8		14.6	25.7	A
9.0		42.2	25.2	A	9.8		5.8	52.9		9.7		11.8	23.4		9.8	22	2.1	59.5		10		19.6	18.5	
10		55.7	25.4		9.4		15.6	51.8		9.4		13.1	5.4		8.9		9.7	43.7	A	9.5		32.3	34.9	
9.9		56.3	21.9		8.5		26.2	33.9	A	9.5		16.2	12.6	A	9.0		27.8	1.3	M	9.5		49.9	56.0	
9.6		57.0	11.7		9.0		29.9	26.8	B	8.7		25.9	59.3	A	8.5		35.3	40.1	A	9.5		52.2	7.4	
9.0	1	15.3	51.5	M	9.3		33.9	44.6		10		37.3	22.9		9.8		52.8	2.5		9.5		56.3	36.2	
9.7		19.2	16.8		9.8		50.7	41.9		9.8		44.6	36.9		10	23	2.5	3.3		9.2	31	11.5	38.2	
9.8		44.6	56.5		8.8		52.0	58.2	M	8.2		47.2	39.6	A	8.3		9.6	4.6	A	9.4		34.2	35.9	
9.4		47.8	14.2		9.2		56.5	6.5	A	9.5		51.2	16.6		9.3		26.6	13.3		9.0		38.2	52.1	M
8.5		49.3	16.8	A	9.1	9	6.0	17.3	A	9.0		54.4	47.0	A	9.6		40.0	46.1		9.5		50.7	30.5	
9.2		56.6	48.1		9.4		7.4	21.1	B	9.4		55.6	4.4		9.5		46.2	56.2		9.3	32	0.3	34.7	
9.5	2	4.2	29.3		9.5		7.5	3.3		9.5	15	0.1	7.7		9.8		52.8	13.1		9.1		0.4	11.9	
9.5		5.3	16.8		9.3		8.2	41.3		9.6		39.4	10.5		9.0		57.4	12.2		9.8		11.2	11.9	
7.3		9.6	46.2	M	9.8		14.1	34.6		10		58.2	12.8		8.9		59.3	19.3		9.4		28.2	38.5	
7.6		14.1	50.5		9.3		17.4	54.7	M	9.4		59.0	59.0		9.5	24	4.4	2.6		9.5		31.0	2.7	
9.5		15.5	25.2		9.3		22.8	14.2		9.5	16	7.6	4.4		9.1		5.7	52.8		9.4		32.2	16.0	
9.1		18.9	43.5		9.8		30.7	39.6		8.7		20.8	52.4	A	8.5		7.0	1.5	B	9.1		39.3	48.4	
9.6		36.1	19.3		9.8		37.5	9.4		9.8		28.2	0.8		9.4		14.8	37.0		9.8		42.2	36.3	
9.5		42.2	39.5		9.5		52.7	59.0		8.3		30.8	20.9	A	9.8		19.7	56.1		8.8		43.5	40.5	
9.5		43.6	46.4		9.1		58.6	42.5		9.3		36.8	20.5		7.3		38.8	39.5	B	9.8		46.7	11.9	
9.3		44.1	59.8		9.0	10	22.6	21.2	A	9.2		37.8	50.2	A	9.4		41.6	53.0		9.9		59.9	14.0	
8.5		48.4	43.6	A	9.1		32.8	42.7	A	9.0		59.4	35.0	A	9.5		45.2	4.0		8.9	33	10.4	6.7	M
9.8	3	12.0	3.2		8.5		40.5	42.6	A	9.8	17	5.5	16.6		8.2		47.7	56.7	A	8.8		29.7	56.5	
8.8		20.7	6.4		8.8		41.6	20.6	A	9.8		7.2	33.5		9.4		54.4	10.7		9.1		33.3	16.7	
8.2		23.8	55.1	A	9.0		42.0	25.9	A	9.5		22.2	1.6		9.4	25	0.1	10.6		8.3		34.3	31.2	B
9.3		28.4	45.2		9.5		48.6	1.2		9.5		24.2	16.6	A	8.0		0.4	8.5	A	9.5		39.4	35.0	
9.5		45.5	4.6		9.3	11	0.1	48.1		9.5		34.1	21.4		9.2		1.8	32.4		9.8		39.7	43.5	
9.5		54.8	11.9		9.6		8.7	49.6		9.8		37.1	4.7		8.3		2.8	58.5	A	8.7	34	8.3	2.4	B
9.5	4	2.1	37.1		9.1		14.8	3.8	A	8.2		47.3	0.4	A	9.1		12.9	55.1	A	9.0		10.0	3.6	
7.5		4.7	24.4	M	9.2		18.1	4.2	A	9.0		51.3	50.4	A	8.0		44.5	36.4	A	9.8		10.1	20.5	
8.5		16.9	2.2	M	9.4		47.6	4.3		9.8		51.6	40.6		9.3	26	13.2	40.0		9.8		24.7	14.3	
8.5		25.2	36.5	A	9.7		49.1	52.3		9.8	18	4.7	42.8		9.2		13.6	50.5	A	9.4		31.3	46.0	
8.9		26.3	19.2		9.5	12	2.0	0.3		9.5		11.2	44.4		9.8		15.2	41.6		9.0		45.8	35.5	
9.3		27.4	18.4		9.6		5.7	15.7		9.8		13.3	16.2		9.1		28.3	14.2	A	9.5		47.0	53.0	
9.1		32.1	53.0		10		9.4	22.6		9.5		33.4	5.6		9.3		45.2	18.1		9.3		59.1	48.4	
9.3	5	18.4	36.0		9.4		13.4	14.2	B	9.8		43.8	23.4		8.9		55.5	56.1	A	7.8	35	2.1	55.2	A
10		50.1	51.7		9.7		22.5	8.6		9.4		45.7	56.8		9.2		55.7	19.3	A	9.8		12.9	43.7	
10		58.4	34.2		neb		24.1	13.6		9.8		48.1	5.4		9.5		56.2	2.9		9.8		46.6	21.0	

4820: Hauptknoten des Omega-Nebels GC 4403, dessen Grenzen ungefähr 12m10s und 12m46s, oder noch weiter sind.

5001—5060

m	18h m s	−16° ′	
9.4	35 49.6	56.7	
9.9	59.4	21.3	
9.1	36 0.9	31.7	
9.5	8.8	39.5	
9.5	18.8	52 5	
9.0	18.8	56.4	A
8.3	28.1	13.6	A
9.5	39.7	20.5	
9.6	47.3	7.6	
9.2	53.6	55.5	A
9.1	37 2.1	46.5	M
9.5	5.8	29.3	
9.1	6.9	39.4	A
9.8	13.7	11.1	
9.3	15.2	44.7	
9.6	23.3	18.8	
9.5	27.4	32.7	
9.5	39.4	47.9	
9.3	51.3	53.8	A
9.7	52.5	16.3	
9.0	55.8	12.1	A
8.9	38 21.3	57.8	A
9.5	36.4	32.9	
9.5	44.6	32.0	
9.8	47.3	46.8	
9.0	48.7	50.8	A
9.5	39 2.8	57.4	
8.2	9.8	7.6	B
9.0	17.2	17.3	
9.0	18.9	41.9	
9.3	28.4	23.4	
9.4	29.1	48.0	
7.4	36.6	55.8	A
7.8	45.8	34.3	A
9.5	46.0	13.0	
9.3	54.7	13.8	
9.5	40 17.6	45.5	
9.4	21.9	54.9	
9.4	26.4	17.5	
8.5	30.9	24.1	A
7.3	41 6.4	52.7	A
9.3	7.7	28.3	
9.5	31.5	58.9	
9.3	38.6	29.9	
9.5	44.7	26.3	
8.4	42 19.3	55.2	A
10	22.6	5.1	
8.0	54.7	19.0	A
9.8	43 9.4	12.8	
9.5	20.9	18.0	
8.3	28.5	40.9	A
9.7	31.0	14.2	
8.8	43.9	28.4	A
9.3	56.4	19.8	
9.7	44 11.4	51.3	
9.8	14.5	12.2	
10	15.1	49.3	
9.3	27.9	34.7	
9.7	37.7	22.3	
7.3	38.2	33.0	A

5061—5120

m	18h m s	−16° ′	
9.8	44 41.3	9.3	
9.1	42.4	38.7	
9.4	53.4	44.6	
8.8	57.4	33.0	A
9.4	45 9.6	54.2	
8.5	21.0	20.0	A
9.5	36.4	41.2	
9.5	37.6	53.9	
9.0	53.9	35.3	A
9.8	46 5.4	52.1	
9.2	12.8	0.9	
9.0	25.1	33.8	A
9.8	30.6	8.5	
8.2	32.4	42.1	B
9.5	46.1	56.0	
9.4	52.9	28.0	
9.0	47 8.4	36.8	
5.2	9.4	33.5	B
9.1	13.9	33.9	
9.8	14.5	23.6	
9.1	16.4	46.8	
10	19.7	16.4	
7.3	22.6	31.2	A
9.0	41.5	45.0	B
9.9	50.4	50.9	
9.4	55.7	50.0	
9.1	48 4.4	54.5	A
9.9	17.4	3.6	
9.4	34.0	27.1	
9.5	36.9	29.1	
9.5	43.3	5.7	
9.8	49.1	59.8	
9.8	49 6.6	57.8	
9.7	9.8	16.7	
9.5	11.5	27.0	
9.1	30.7	43.8	A
9.8	30.8	39.8	
9.5	31.2	14.9	
9.5	50 3.5	24.2	
8.2	12.7	49.4	A
9.5	15.1	22.6	
9.5	21.9	11.5	
7.8	46.1	3.2	B
9.5	49.4	55.3	
9.3	53.0	49.8	
9.6	51 5.5	54.0	
9.1	8.7	3.1	
7.8	18.5	17.7	A
9.0	43.0	24.5	
9.1	58.8	36.7	
9.5	52 8.5	57.3	
9.1	32.0	53.6	
8.8	37.6	24.9	A
9.5	51.5	13.4	
9.3	53 1.4	52.3	
8.3	7.6	20.2	A
9.4	14.3	7.8	
9.8	47.1	15.7	
9.4	50.1	27.5	
9.5	54.4	8.2	

5121—5180

m	18h—19h m s	−16° ′	
9.4	53 57.1	11.5	
9.0	54 10.5	5.5	
7.8	10.8	47.8	A
8.3	34.7	11.2	A
9.3	42.6	18.0	
9.5	53.7	33.1	
9.3	55 14.0	19.6	
8.3	30.1	12.7	M
9.5	49.2	22.0	
9.5	50.0	54.2	
9.8	56 11.7	20.8	
9.5	12.8	34.3	
9.5	18.1	35.8	
9.5	25.5	52.4	
9.2	46.0	54.7	A
9.1	52.1	31.7	
10	56.6	19.7	
9.6	57 1.6	53.5	
8.1	15.0	46.6	A
9.7	25.1	17.0	
9.4	27.0	2.2	
9.4	27.7	46.8	
9.4	45.7	30.9	
9.5	50.9	58.9	
9.5	55.6	14.3	
9.5	56.4	5.4	
9.1	58.9	5.4	
8.9	58 2.4	58.7	B
9.1	6.1	1.0	
9.5	19.9	11.0	
9.5	20.1	33.0	
9.5	27.7	43.9	
6.2	31.7	26.8	A
9.8	35.7	5.0	
9.4	46.0	21.5	
9.5	49.5	16.5	
8.2	54.5	8.0	A
9.2	59 29.3	28.4	
9.1	37.4	29.0	
9.5	41.0	17.0	
9.5	42.2	48.7	
9.3	48.2	16.8	
9.0	49.0	50.0	
9.5	54.2	53.0	
8.0	0 9.7	5.9	A
10	21.1	22.5	
9.5	21.8	0.1	
9.8	34.2	19.8	
8.8	36.9	26.8	
9.5	41.4	45.4	
8.5	59.1	3.4	A
9.4	59.8	1.1	
9.5	1 1.8	49.4	
9.5	10.3	23.0	
9.3	19.0	7.8	A
10	25.2	20.4	
9.4	28.9	32.8	
8.6	33.0	52.2	
9.0	49.9	49.2	
9.6	51.4	12.6	

5181—5240

m	19h m s	−16° ′	
9.5	1 52.4	30.1	
9.4	58.6	19.5	
9.0	59.1	31.5	
9.5	2 0.9	3.8	
9.2	7.4	31.4	
9.0	27.8	44.2	
7.8	47.5	8.9	A
9.1	51.6	19.5	
9.4	54.9	54.1	
9.1	3 9.5	29.5	M
9.0	9.8	17.1	
9.1	11.4	35.2	
9.8	30.9	54.3	
9.0	47.1	9.1	
9.0	47.1	2.4	
8.0	48.2	39.7	A
9.5	48.5	15.9	
8.8	56.0	31.6	M
9.8	4 0.8	57.5	
9.5	13.0	50.4	
9.5	15.3	16.2	
9.6	31.4	55.6	
9.5	56.6	30.7	
9.3	5 3.1	59.6	
9.2	17.3	2.2	
9.1	18.6	1.6	
9.5	19.3	56.2	
8.5	24.8	14.0	A
8.5	38.0	54.9	M
9.2	39.8	16.7	A
8.0	45.1	8.3	A
9.5	56.0	29.2	
9.9	57.5	30.5	
9.4	6 36.0	16.0	
8.9	42.5	13.4	A
9.5	44.7	24.4	
9.6	45.8	15.1	
9.8	54.9	34.6	
9.7	55.8	6.6	
7.1	7 5.8	20.6	A
9.4	16.9	29.5	
9.6	17.0	13.0	
8.9	28.4	31.5	M
8.8	30.5	32.9	M
8.9	35.9	52.3	A
9.8	37.9	30.8	
9.9	45.4	6.8	
9.8	46.0	20.4	
9.4	49.0	26.0	
9.3	54.5	38.6	
8.8	57.4	33.9	
7.8	58.7	49.2	B
9.7	8 3.0	42.7	
9.3	4.0	52.5	
9.4	14.1	6.6	
8.7	14.4	38.4	
9.3	16.4	22.4	
8.3	21.1	31.2	B
10	23.6	47.7	
8.8	24.4	41.2	

5241—5300

m	19h m s	−16° ′	
9.2	8 25.7	50.6	B
9.0	28.5	51.6	A
9.3	29.2	25.9	
9.3	36.4	27.7	
9.1	41.5	13.1	
9.4	51.9	42.0	
8.4	52.7	17.9	A
9.6	9 3.1	28.1	
7.4	5.2	19.5	A
9.8	7.5	48.3	
9.3	14.2	10.5	
9.6	17.5	51.7	B
6.8	20.9	13.2	A
9.8	22.6	7.2	
9.0	31.0	36.6	M
7.7	46.2	12.3	A
8.7	50.2	31.2	M
9.8	51.5	44.7	
8.2	53.1	56.6	A
8.0	58.9	5.3	A
9.7	10 6.5	16.6	
9.6	7.7	18.3	
9.7	11.1	30.3	
9.0	13.4	45.3	A
9.8	15.2	9.5	
9.5	18.6	36.3	
9.7	21.9	19.8	
9.7	25.2	21.9	
9.8	30.5	46.5	
9.5	38.5	0.4	
9.5	44.1	14.3	
6.8	51.9	10.2	A
9.1	54.9	56.3	A
9.5	11 2.0	26.5	
9.4	32.9	19.8	
9.3	33.7	2.3	
9.2	12 0.6	38.6	
9.1	11.5	24.1	M
9.1	36.0	51.7	
9.5	57.5	42.4	
9.2	13 6.5	5.0	
9.1	24.0	33.0	
4.7	25.1	13.1	A
10	28.9	17.8	
9.2	30.6	20.9	
9.5	44.0	8.5	
8.8	55.8	51.8	A
9.2	14 21.2	16.5	A
8.9	36.6	42.9	
9.8	36.9	51.1	
9.1	15 2.0	36.2	
8.7	7.8	46.5	M
7.8	19.7	5.3	A
9.6	27.6	51.7	
9.5	45.6	27.5	
9.1	49.3	35.4	A
9.4	16 2.5	53.7	
9.0	9.1	44.6	
9.4	13.7	56.7	
9.1	14.8	51.2	A

5301—5360				5361—5420				5421—5480				5481—5540				5541—5600			
	19h		−16°		19h		−16°		19h		−16°		19h—20h		−16°		20h		−16°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.7	16	43.0	3.9	9.0	26	1.7	8.2	9.3	34	48.3	53.1	A	8.7	52	56.6	57.7	A	9.8	7	8.2	6.8	
9.4		55.6	12.5	9.5		29.1	50.5	9.4		49.7	41.1		10	54	4.8	49.9		9.6		9.4	59.5	
9.0		56.0	11.0	9.1		34.6	26.5	8.4	35	14.3	18.7	A	9.3		7.4	54.1		8.0		18.3	17.4	M
10	17	13.5	2.9	9.8		40.2	6.1	9.4		22.1	42.1		9.7		16.1	21.7		9.3		37.1	6.8	
9.8		23.6	8.9	9.5		58.7	48.0	9.6		59.2	13.1		8.0		19.3	16.1	A	7.3		48.9	43.8	A
9.5		23.9	52.0	9.5	27	11.2	13.9	9.8	36	17.8	28.2		9.4		32.4	26.2		8.6	8	14.8	47.3	A
9.0		27.3	52.0	9.0		36.8	1.1	A	9.8		25.7	35.4		8.7		33.4	27.9	A	9.4		49.6	4.8	
9.3		55.5	33.1	9.1		45.2	53.3		9.4	37	17.9	21.1		9.5	55	33.8	31.7		9.1	9	9.7	37.8	A
9.4	18	8.6	11.5	9.5		52.9	15.7		9.3		28.1	9.2		9.2		49.0	51.6	A	9.1		12.9	25.0	
9.0		19.3	11.2	9.5	28	11.4	14.0		9.7		46.3	12.3		8.8	56	6.4	19.3	M	7.0		15.0	15.9	A
9.1		38.0	35.3	A	9.1		11.5	4.3	A	9.7	38	2.1	22.5		8.8		7.9	6.4		9.3		17.7	13.2	
9.2		40.0	25.1		9.5		17.4	19.5		9.8		13.2	43.3		8.6		8.4	4.4	M	8.9		31.0	16.4	
9.4		57.0	37.8	B	9.5		22.7	25.0		8.2		15.7	33.5	B	9.8		15.5	7.9		9.5		44.1	27.3	
9.0		57.1	3.6		9.3		34.2	38.0		9.0		34.9	16.4		9.5		15.5	52.9	A	9.2		44.7	42.1	A
9.6		59.1	4.0		9.7		41.9	17.4		9.3	39	0.5	15.7		8.7		27.2	26.2	M	9.5		52.2	13.9	
8.9	19	3.5	31.1	A	9.1		43.8	2.9		9.3		8.9	21.7		9.1		37.0	42.7	A	9.8	10	7.5	20.2	
9.1		10.3	18.2		9.0		44.9	45.9	A	9.8		11.2	49.2		9.2		49.7	18.6		9.2		11.9	31.4	M
8.0		16.0	44.6	A	9.2		50.9	53.4		9.5		18.0	14.9		8.0	57	6.0	46.8	A	8.0		45.1	17.9	M
9.4		40.6	19.1		8.9		55.6	41.1	A	8.9		37.1	51.2	A	8.0		11.3	3.9	A	9.3		47.7	16.0	
9.0		54.0	30.5	A	9.4	29	14.1	26.6		8.5	40	16.8	31.1	A	8.4		33.9	9.7	A	9.3	11	3.7	57.2	WZ
9.5		54.9	0.7		8.8		21.2	46.0	A	8.8		18.0	11.1		9.5	58	8.4	26.3		9.5		23.1	2.7	
9.9	20	5.8	55.9		9.8		27.7	18.0		8.8		50.9	20.4		9.7		14.1	45.5		9.5		37.2	14.2	
9.9		12.5	2.5		8.9		54.7	8.0	M	9.4	41	41.0	47.2		9.4		23.5	52.7		9.5		39.4	39.9	
9.0		28.5	25.4	A	9.4		57.1	41.1		9.4		59.2	0.9		9.7		55.8	16.5		9.6		58.6	0.2	
8.5		31.0	48.4	A	9.5		58.7	50.1		9.6	42	24.1	1.6		8.6	59	42.6	19.6	M	8.6	12	1.1	2.9	M
9.4		32.3	39.2		9.4	30	9.5	10.7		9.8		33.7	21.1		9.5	0	7.4	29.5		9.1		32.3	30.3	
9.2		35.6	12.7		9.7		17.1	43.5		8.5	43	14.7	13.9	M	9.4		12.9	56.6		9.8		36.5	20.8	
9.3		42.6	15.3		9.5		32.2	26.9		9.8		15.0	54.5		9.7		14.0	14.1		9.4		43.3	22.5	
9.1		57.1	42.9	A	9.4		42.6	38.1		9.3		22.8	41.5		8.1		20.0	7.7	M	9.7	13	5.8	30.9	
9.3	21	2.3	10.6		9.0	31	9.5	12.4		9.3		43.0	52.1		9.4		30.2	5.5		8.7		30.0	44.2	
9.5		13.5	53.0		10		15.7	25.1		9.2	44	11.0	42.3		9.2		31.2	43.6		9.5		31.9	12.5	
9.4		22.6	27.0	A	9.1		20.2	45.2		9.8	45	1.6	33.7		9.7		31.9	40.5		9.2		41.1	5.1	
7.5		45.2	16.3	A	9.4		24.5	21.6		9.8		21.6	33.3		9.3		39.8	44.2		9.4		46.0	34.9	
9.5		57.6	37.5		9.2		30.5	25.8		7.8	46	26.3	17.1	A	9.2		52.2	20.7	WC	9.8		55.1	23.5	
9.1		58.6	27.0		9.4		31.4	56.5		9.2		48.3	15.2		9.1		55.4	33.6		7.2	14	1.6	4.5	A
9.1	22	11.5	52.3		9.3		56.4	57.9		9.5	48	6.1	4.5		9.8		55.9	24.0		9.2		3.5	34.0	
7.5		27.8	28.0	A	9.2		57.7	17.2		8.4		6.4	45.4	M	9.2	1	0.3	56.0		7.9		10.2	17.2	B
9.5		30.4	4.4		8.7	32	4.8	7.9		7.3		19.7	5.0	A	9.4		22.4	20.7		10		13.1	13.6	
9.5		37.0	58.9		5.5		25.2	30.7	A	9.7		26.5	16.4		10		28.5	44.7		9.9		14.1	14.1	
8.0		57.5	42.1	A	8.7		27.7	36.4	A	9.2		28.5	57.5		9.5		59.4	52.4		9.4		14.8	28.8	
9.3		58.6	12.9		8.7		30.3	42.7	A	8.2		30.1	59.7	A	9.3	2	3.1	13.8		8.3		20.1	58.7	B
9.4	23	1.1	27.3		9.3		52.2	46.8		9.8		36.0	22.5		9.9		41.2	44.5		9.1		26.4	5.5	WC
9.6		14.1	17.1		9.7	33	0.9	39.8		9.1		52.4	38.5		9.3		56.5	10.5		9.5		32.2	5.7	
7.8	24	7.7	3.1	B	9.1		4.8	6.7	A	9.2	49	7.8	47.2		9.4	3	12.3	59.0		9.5		39.1	0.1	
9.0		12.5	34.7	A	9.3		6.0	29.5		9.8		14.9	48.3		9.0		14.6	17.4		9.8		55.4	49.8	
9.0		19.6	37.6	A	9.4		15.7	26.4		9.5		15.2	52.5		9.5		24.6	16.7		9.4		56.3	37.3	
9.5		30.7	13.7		9.2		25.2	59.2	A	9.5		39.0	15.1		9.5		59.4	40.4		8.0	15	0.8	14.9	A
9.1		37.6	37.6		9.5		28.2	57.0		9.1		55.3	6.4		9.8	4	7.2	11.3		9.2		13.2	19.1	
9.5		44.1	28.0		10		29.3	8.0		7.3		57.1	20.9	A	9.3		21.5	6.5		9.5		31.1	35.1	
9.8		59.8	2.6		9.8		47.2	31.6		8.9	50	5.0	34.0	WZ	9.6		49.9	34.6		9.5		50.3	8.8	
8.0	25	1.0	55.2	A	9.5		52.7	53.7		8.8		18.2	8.0		9.7		55.5	50.0		9.4	16	18.5	29.7	
9.5		1.4	15.3		9.0	34	9.8	40.4		9.5		51.3	55.3	A	9.5	5	8.6	21.0		9.3		20.6	28.4	A
9.3		2.4	54.1		5.0		13.7	27.8	L	8.7		57.6	25.4	A	9.1		32.8	41.3		9.3		41.3	7.8	
9.5		6.5	56.2		9.4		25.7	20.5		9.5	51	20.5	56.5		9.5		57.0	19.6		9.8		46.8	29.2	
9.5		10.6	43.2		9.2		27.2	33.4		10		25.4	6.5		8.8	6	0.0	26.5		9.8		54.1	10.0	
8.0		33.2	7.5	M	9.2		28.4	35.6	R	9.8		34.9	5.2		8.5		28.5	2.4		8.9	17	6.0	49.9	A
8.0		40.1	35.2	A	9.3		31.0	9.3		8.8		41.0	5.6	A	9.3		34.4	38.6		9.3		11.2	23.3	
9.8		52.9	17.8		9.2		33.1	21.2		7.1	52	15.8	16.4	B	9.8		48.2	12.5		9.8		16.0	30.7	
7.5		55.6	36.8	A	9.1		36.0	46.8		8.8		21.9	16.5	B	9.0		51.1	0.2		9.5		35.7	7.4	
7.2	26	0.2	41.3	A	8.3		42.9	21.0	A	8.7		34.3	6.5	M	9.0		52.9	33.8		9.8		59.2	49.8	

5360: roth

5601—5660				5661—5720				5721—5780				5781—5840				5841—59			
	20h	—16°			20h	—16°			20h	—16°			20h—21h	—16°			21h	—	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s		
9.0	18 4.6	28.7		9.7	31 33.2	44.8	WC	9.2	46 21.0	2.7		9.1	56 45.0	20.2		9.5	11 20.0		
10	15.2	58.6		9.4	47.1	49.2		9.2	36.8	5.1		9.4	50.9	5.3		9.8	32.2		
10	20.7	55.6		6.0	32 23.2	38.1	L	9.5	46.9	35.6		9.5	53.1	28.4		9.0	46.6		
8.3	46.6	22.6		9.1	25.4	6.1		9.1	47 0.3	51.4		9.8	55.3	11.2		9.1	12 8.2		
10	19 58.9	6.6		9.6	47.2	48.3		9.1	1.7	40.5	A	9.0	59.1	47.6	A	9.5	19.1		
9.2	20 4.0	10.5		9.8	49.3	55.1		9.5	6.3	8.1		9.4	59.1	17.0		10	22.7		
9.8	30.1	28.5		9.8	57.7	53.2		9.4	6.4	52.7		9.8	57 2.1	33.9		10	13 18.5		
9.3	32.1	58.8		9.4	33 26.2	32.3		9.1	16.9	35.6	WZ	9.6	30.7	52.1		9.9	20.0		
6.0	33.3	13.2	B	9.5	50.9	0.7		9.8	18.0	8.5		9.4	45.2	44.0		8.3	45.5		
9.0	52.4	27.0		9.3	34 12.6	14.1		9.5	35.2	39.4		9.8	58 13.3	27.1		7.5	46.7		
9.5	21 10.6	33.7		9.4	28.3	35.0		10	48 8.8	56.3		9.3	30.7	39.0		9.4	53.0		
9.5	13.1	34.7		8.0	30.4	10.8	A	9.3	15.1	0.8		8.2	44.7	9.2	A	9.0	14 2.1		
9.1	56.5	42.8	M	9.3	30.8	9.5		9.1	22.6	1.7		9.6	46.2	37.3		9.3	20.2		
9.8	22 12.0	47.5		9.1	32.1	52.0	WZ	8.0	39.5	24.2	A	8.9	49.8	28.4	R	9.4	15 19.1		
9.4	15.6	44.8	M	8.2	36.8	25.2		9.5	44.8	56.8		9.8	53.0	10.9		9.4	31.0		
9.8	33.0	15.3		8.6	55.5	7.9	A	9.8	57.3	12.1		9.8	53.8	36.0		7.9	16 18.1		
7.0	36.0	15.1	A	10	35 0.1	37.3		9.6	49 2.6	5.7		7.3	59 4.3	32.9	L	9.5	27.8		
9.2	41.8	4.5		9.1	4.5	9.3		8.9	3.8	16.1		7.3	8.2	19.4	A	9.4	51.4		
9.5	45.7	58.2		9.4	10.9	1.0		8.5	3.9	44.0	A	9.8	23.2	48.0		9.0	54.6		
9.3	51.0	21.1		9.4	40.4	41.5		9.8	23.2	13.6		7.7	54.1	12.4	A	9.3	17 18.0		
9.0	57.8	55.7		8.5	41.0	19.6	M	5.8	33.6	34.7	A	9.5	0 13.7	3.1		9.2	23.5		
9.8	23 10.0	16.4		10	59.1	54.2		9.3	51.6	31.5		9.5	15.7	4.5		9.8	18 0.9		
9.8	17.6	29.3		9.7	36 12.1	36.5		9.8	54.5	49.5		9.4	44.7	55.9		9.4	8.3		
9.5	22.0	59.9		9.4	20.4	0.4		8.8	56.8	59.5	R	8.5	1 5.8	44.5	A	9.4	19 4.9		
10	31.7	10.6		9.8	30.2	42.8		9.7	50 7.2	17.5		10	8.0	39.7		9.2	42.9		
9.5	32.0	58.4		9.0	43.5	52.1	A	9.5	21.6	2.1		9.9	9.3	18.8		9.0	20 0.8		
9.2	24 0.6	38.0		9.7	47.4	38.9		9.3	34.1	32.5		10	15.3	19.1		9.4	14.3		
8.6	4.1	37.1	A	9.5	56.1	9.1		9.8	34.8	55.9		9.4	25.8	15.3		9.5	36.7		
9.5	21.5	29.0		9.1	37 4.3	33.5	M	9.1	37.5	58.2	WZ	9.5	36.3	42.3		9.4	43.7		
10	43.2	33.6		6.7	5.4	19.1	M	9.8	39.6	44.7		7.2	2 5.4	17.2	A	10	49.5		
9.8	50.7	4.2		8.5	7.9	18.3	M	9.4	44.0	50.1		9.0	32.2	46.0	WZ	9.3	56.9		
8.6	53.6	30.7	B	9.5	38 22.2	47.4		10	47.1	31.7		9.8	37.1	42.5		9.6	21 32.9		
9.7	57.9	58.8		9.3	25.6	18.3		8.5	49.9	16.1	M	9.9	38.2	38.3		9.6	44.0		
9.0	25 12.8	5.7	M	8.7	39 13.9	27.3		8.7	50.9	10.9	M	9.0	3 7.3	4.9	M	9.8	22 1.0		
8.7	26 8.8	11.7		7.7	20.0	8.0	M	10	55.0	45.0		9.0	9.2	58.9		9.8	4.4		
10	16.1	32.1		9.6	33.3	38.5		10	55.6	29.4		8.5	18.8	37.0	A	8.4	15.8		
9.2	35.3	3.5		9.0	34.8	13.1		9.8	57.4	19.2		9.5	57.1	18.5		9.5	37.4		
8.0	40.6	17.2	A	9.0	42.7	47.5	WZ	9.1	52 12.6	28.4	WZ	9.7	4 6.9	44.4		9.0	56.4		
9.5	47.0	48.0		10	49.9	6.6		8.5	18.4	18.7		9.8	26.9	7.2		9.7	23 25.0		
9.3	52.9	52.2		9.5	52.8	52.6		9.8	19.6	29.0		10	27.9	1.4		10	24 11.6		
9.8	27 35.2	51.5		9.8	55.5	11.7		9.2	21.3	55.4	WZ	8.5	37.4	26.5	R	8.5	25.5		
9.5	44.1	22.9		7.3	58.3	52.4	R	9.4	29.6	31.4		9.8	6 24.3	3.2		10	25.6		
9.8	53.2	38.5		10	40 27.2	37.4		10	34.8	58.1		9.5	55.2	23.5		10	55.3		
9.8	58.2	39.8		9.8	58.4	38.1		8.3	40.7	23.8	M	8.3	7 8.1	20.5	A	9.0	25 28.0		
9.2	28 9.7	24.9		9.8	41 1.5	6.4		9.4	45.6	32.3		9.5	19.8	58.3		7.2	38.9		
9.0	15.3	2.2		9.5	13.4	29.4		10	57.8	20.5		8.8	23.0	34.7	A	9.5	54.0		
9.8	28.7	38.5		9.6	41.3	44.1		9.7	53 27.6	12.7		8.3	31.4	41.3	A	9.5	26 1.5		
10	41.1	24.6		9.7	53.0	8.4		10	54 10.2	28.6		9.6	8 18.4	27.7		10	46.6		
8.8	29 11.2	31.6	M	7.5	42 28.5	2.8	A	7.2	30.7	2.2	B	10	31.5	49.9		8.7	27 12.0		
9.5	15.0	10.3		9.7	45.6	25.4		9.1	34.6	23.2		9.8	52.3	51.2		9.0	17.9		
9.6	42.6	59.9		8.2	56.9	56.8	A	9.2	41.1	56.7	WZ	9.3	9 11.4	34.4	R	9.5	20.6		
9.8	54.8	26.6		9.5	43 20.6	16.4		9.3	55.2	7.2		9.4	42.5	44.2		8.7	53.0		
9.6	30 13.0	41.5		9.8	25.5	5.5		10	55 10.6	12.8		7.8	48.4	29.8	B	9.8	28 14.2		
9.5	20.0	56.9		9.8	44 5.2	12.2		9.5	32.6	37.4		9.5	10 29.9	47.6		9.8	28.0		
9.0	35.8	27.9	A	9.7	6.9	32.3		10	57.1	47.4		9.6	38.4	5.5		8.6	58.7		
9.6	37.2	31.2		9.4	30.4	21.4		10	59.7	50.0		9.5	39.7	50.7		9.5	29 3.5		
9.2	43.7	20.0	A	9.5	32.5	59.2		10	56 7.2	43.4		9.3	43.6	4.3		10	9.0		
9.3	56.1	57.4	WZ	8.0	40.8	42.6	B	8.3	15.1	59.9	B	9.8	50.7	55.6		9.5	25.6		
9.5	31 1.3	58.2		9.0	53.5	25.0	A	8.7	16.7	21.8	A	9.8	55.9	37.3		8.8	28.3		
9.7	16.6	51.2		9.8	45 20.9	35.0		8.6	27.3	12.5	A	6.8	11 11.4	47.1	L	9.9	40.5		

5718: 41ᵐ36 42′23″0 B_8, Ep. 1872.13
5797: 4ᵐ06 33′3″3 B_4, Ep. 1871.61; und derselbe 4ᵐ15 33′4″6 B_1, Ep. 1883.65
5798: 8ᵐ24 19′12″9 B_4, Ep. 1871.62

5901—5960					5961—6020					6021—6080					6081—6140					6141—6200				
	21h		−16°			21h		−16°			21h−22h		−16°			22h		−16°			22h		−16°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.5	29	48.6	53.9	B	8.8	44	37.8	56.2	WZ	9.4	58	52.6	20.9		7.7	17	43.2	20.0	B	9.9	35	37.7	35.5	
9.8	30	27.9	53.9		9.3		38.7	28.4		9.6		55.3	56.9		7.8		56.8	5.3	A	8.0		45.3	54.0	A
8.3		35.7	14.8	M	9.0		43.0	28.7	A	9.8	59	3.6	38.3		9.6	18	27.3	36.4		9.8		45.5	13.9	
10		58.0	53.9		9.1	45	30.3	55.3		10		12.1	46.0		10	19	7.5	38.7		9.7	36	8.5	27.2	
8.3	31	1.8	5.8	A	9.9		42.8	13.1		10		14.8	6.2		9.1		53.6	32.0		9.2		44.4	1.0	
9.5		13.7	45.5		9.1		49.0	23.6		9.7		45.3	57.3		9.2	20	4.6	31.9		9.0		53.9	42.2	
9.9		22.9	31.4		8.8		56.2	6.2		8.5		58.7	42.4	WZ	9.6		21.2	47.1		9.0	37	34.3	28.8	WZ
10		47.1	59.1		9.4	46	10.1	5.9		10	0	2.8	18.2		9.0		48.6	24.3	WC	9.0		34.7	58.8	
9.2		49.3	39.6	WZ	9.6		46.8	46.2		9.5		44.1	59.1		9.5		52.6	15.5		6.9		43.4	20.5	A
9.5		53.9	8.5		9.4		51.3	36.1		9.1		52.7	27.8		8.5		53.2	55.2	A	9.0	38	14.5	20.6	
9.3	32	14.3	10.5		9.0	47	41.4	11.5		9.9	1	2.7	8.3		9.8		59.7	35.7		9.8		43.5	5.4	
9.6		26.2	45.3		8.9		48.9	20.3	A	9.6	2	13.1	57.0		8.3	21	4.8	53.4	A	7.2	39	32.4	54.3	A
9.2		29.3	6.7	R	9.4	48	32.8	46.0		8.9		26.8	29.0	WZ	9.8	22	11.8	41.0		9.7		40.4	3.7	
9.3		45.8	3.7		9.0		36.8	32.6	WZ	8.5		29.3	38.9	WZ	9.4		13.3	18.1		9.7	40	6.9	7.1	
10		58.8	16.7		9.5		46.8	41.4		10		51.0	54.0		9.4		18.9	5.0		9.0		22.4	29.9	
9.8	33	11.7	46.1		9.5		47.6	29.5	WZ	9.8		53.3	44.5		9.2		50.6	56.4		9.8		57.0	20.5	
9.4		32.7	16.6		9.4		49.5	51.8		9.0	3	5.2	55.2	A	9.5	23	38.0	7.1		9.7	41	12.5	33.2	
9.8		43.8	33.7		8.7		53.9	17.7	A	10		19.5	50.9		9.4		42.0	9.5		9.0		25.4	27.0	A
10		59.3	25.7		9.0	49	12.3	38.4	A	9.1	4	13.9	11.9		8.8		44.0	10.4	A	9.9		44.5	40.0	
9.7	34	4.5	11.8		9.9		15.2	57.2		9.0		44.3	1.1	A	9.8	24	40.4	24.4		10	42	42.0	45.4	
9.5		12.9	6.5		9.4		19.7	47.4		9.5		51.1	21.7		9.1		41.9	28.3		9.0	43	24.6	15.1	
9.8		16.0	22.6		8.8		25.3	55.5	A	9.2	5	9.4	28.0		10		48.0	56.5		9.0		42.6	55.3	A
9.7		17.5	58.7		9.4	50	5.9	43.5		9.1		27.4	39.9	A	9.3	25	42.3	21.7		9.8	44	27.1	12.9	
8.0		35.4	25.0	R	9.8		23.9	25.7		8.5	6	16.3	53.9	WZ	9.7		56.9	59.4		9.8		29.4	2.0	
10		52.7	29.8		9.8		38.5	36.4		9.0		40.3	17.2		9.3	26	42.4	33.4		8.8		46.1	48.0	
9.7	35	2.9	17.1		10	51	3.8	43.3		6.5		46.4	30.8	A	9.8		49.3	13.7		9.5		52.7	2.8	
10		18.8	50.4		8.9		20.2	20.3		7.8		53.5	24.8	A	9.1		56.9	33.2		9.0		52.7	4.6	
10		45.6	37.3		9.3		31.7	58.5		9.4	7	13.4	42.7		10	27	33.1	59.9		9.3		59.2	18.6	
10	36	1.0	29.4		9.6		53.8	12.6		10		36.6	57.1		9.8		44.0	58.7		9.4	45	14.0	12.1	
9.5		7.5	48.0		10	52	4.9	29.2		9.0	8	13.0	42.0		9.2	28	1.9	25.8		8.4		58.6	23.1	A
10		19.6	45.9		9.4		22.8	53.6		9.6		22.0	10.8		9.4		11.7	16.3		9.0	46	10.7	37.2	
9.1		20.4	42.8	WZ	9.5		29.9	33.1		9.8		25.9	42.5		10		45.2	10.3		8.9		43.4	9.3	
8.3		20.9	38.1	R	9.3		35.6	31.8		9.8		50.1	24.0		9.2	29	6.0	27.5		3		56.3	35.1	A
9.8		28.8	46.8		9.1	53	21.4	54.3		9.8	9	12.3	8.0		9.0		11.0	28.2	A	9.3	47	32.3	54.5	
9.9		31.8	46.4		9.1		25.5	6.6		9.6		24.7	14.7		9.4		22.9	6.4		10		49.5	15.2	
8.8		48.0	1.8		9.8		27.4	56.8		8.5		30.5	45.7	B	9.5		28.1	53.0		10		49.8	9.8	
9.9		59.8	54.0		9.2		30.3	16.1		7.2		35.5	41.9	A	9.8		41.4	4.0		8.5	48	2.3	16.2	A
8.9	37	7.5	15.6	M	7.0		38.3	18.2	B	9.0		57.0	39.0		9.0		43.2	55.8		9.0		20.8	14.6	A
9.9		42.5	25.2		9.8		43.9	32.3		9.5	10	34.8	32.8		9.5		48.4	6.6		9.2		26.6	16.2	
9.3		47.5	2.9		9.6		53.5	10.4		9.0		39.1	23.0	R	9.3	30	10.5	35.2		10		30.7	47.7	
9.8	38	10.1	36.8		8.5		59.7	5.3	B	9.3	11	13.4	12.0		9.5	31	22.8	15.7		9.4		53.2	9.8	
8.5		20.0	39.0	A	9.5	54	9.6	27.1		9.7		33.2	10.7		9.9		29.6	41.7		9.7	49	28.9	59.0	
3	39	2.2	46.7	B	8.8		32.0	52.8	R	8.8		50.2	15.3		9.6		54.6	18.9		9.7	50	2.6	58.7	
9.8		3.4	12.6		9.2		43.5	27.1		10	12	12.1	37.5		9.4		56.6	18.3		8.2		29.0	40.6	WZ
9.7		37.6	29.2		9.0	55	26.4	52.2	WZ	9.0		19.0	0.9	B	8.3	32	22.2	42.5	WZ	9.9		56.8	8.2	
8.3		55.2	44.7	A	9.8		33.6	12.4		9.8		57.2	38.4		9.5		23.5	5.8		9.3	51	10.6	58.0	
9.1	40	53.5	53.6		9.5		34.3	38.8		9.5	13	51.2	11.2		8.6		25.2	1.5	A	9.4		43.0	28.5	
9.5	41	0.3	46.1		9.9		38.2	12.9		9.5		57.6	45.0		9.9		31.1	19.5		8.2		54.0	52.7	A
9.5		10.5	48.6		8.5		51.0	36.5	A	8.2	14	33.6	11.1	B	9.8		48.9	32.7		9.5	52	5.3	25.5	
9.8		52.6	28.9		10	56	13.0	2.0		8.5		40.7	34.6	WZ	9.8	33	16.1	33.6		9.8		18.5	41.1	
9.8	42	23.5	29.6		9.6		13.0	0.4		9.0		44.7	6.8		9.5		26.6	20.7		9.4		45.5	17.3	
7.8		27.0	52.1	A	8.0		18.5	51.5	A	9.5	15	2.0	9.4		10		36.2	20.2		9.5	53	36.9	21.7	
9.6		32.1	31.1		9.3		54.6	29.8		9.4		26.7	47.4		9.5		52.3	41.9		8.5		51.0	8.9	M
9.5		46.9	7.9		9.8		59.1	14.4		9.8		27.9	3.8		8.2		54.2	22.5	A	9.5	54	13.5	11.2	
9.6		47.2	1.8		9.5	57	17.0	16.5		8.3		44.2	42.0	A	8.7	34	10.2	24.2	A	9.4	55	25.8	49.5	
9.2	43	19.6	46.1		9.8		38.7	1.7		8.3		48.7	18.7	A	10		15.8	28.4		9.5		37.3	27.4	
9.2		51.6	12.2		9.5		39.3	33.0		8.8	16	29.3	9.2	A	9.2	35	13.7	35.9		9.4		52.6	25.7	
9.9	44	22.2	21.1		9.5		55.2	19.8		9.9		41.4	12.1		10		16.5	50.4		9.8	56	1.9	19.3	
9.7		22.6	14.2		8.3	58	5.6	41.9	WZ	9.9	17	7.8	14.5		10		29.8	52.0		9.3		14.2	9.5	
10		31.4	51.0		9.8		50.3	52.0		9.5		26.2	55.4		8.3		37.3	39.3	A	9.1		32.7	49.1	

5946: 54.81 44′48.″4 B_4, Ep. 1872.24 5952: 26.45 51′57.″0 B_4, Ep. 1871.66

6201—6240

	22h—23h	—16°	
m	m s	′	
9.1	56 37.7	47.3	M
9.0	50.0	1.9	A
9.4	57 3.8	56.0	
8.9	8.7	29.9	
8.3	45.7	12.1	
9.7	58 11.2	12.1	
9.1	11.8	34.1	
8.0	13.5	13.8	M
10	51.1	45.8	
9.2	59 8.3	24.6	
9.1	11.9	23.6	
10	32.4	27.9	
10	47.3	10.3	
10	53.4	42.0	
9.5	0 1.3	54.3	
10	18.4	19.2	
9.5	19.6	0.4	
10	41.1	11.1	
10	42.7	5.3	
9.2	1 39.8	0.0	
9.8	2 4.2	19.0	
9.5	24.1	9.7	
9.2	25.2	31.6	
8.5	25.4	58.3	A
8.9	32.1	56.5	A
10	41.2	24.6	
9.1	44.7	24.1	
9.1	53.5	31.1	
9.8	3 6.5	9.3	
10	27.5	51.2	
8.9	31.5	47.0	
9.2	57.9	2.9	
10	59.0	35.6	
9.6	4 0.8	41.9	
9.1	6.9	10.4	
8.7	7.8	56.9	A
9.1	21.0	27.5	
8.7	38.1	38.4	A
9.3	5 34.3	15.9	
9.1	6 7.6	59.1	A

6241—6280

	23h	—16°	
m	m s	′	
10	6 21.1	49.6	
9.5	52.7	14.2	
9.9	7 8.6	59.6	
9.8	40.2	55.9	
10	49.3	22.5	
9.0	55.1	38.9	WZ
9.1	8 25.7	41.0	
10	33.2	36.6	
9.3	35.2	52.2	
8.3	9 1.8	21.4	B
10	2.7	14.2	
9.3	9.8	19.8	
10	37.3	49.7	
6.5	51.2	57.5	A
10	10 7.3	49.1	
10	58.7	5.7	
9.1	11 48.3	0.5	
9.6	55.6	45.5	
7.0	12 3.9	34.2	M
9.8	4.5	12.5	
10	23.2	2.8	
9.3	42.0	19.7	
9.8	52.4	38.4	
9.4	53.1	27.7	
9.0	13 28.7	0.2	M
9.3	38.9	44.9	
10	14 1.5	49.1	
9.6	4.8	6.2	
10	24.6	11.2	
9.7	45.0	44.0	
9.5	49.0	46.9	
9.0	15 8.3	4.2	
9.6	18.4	38.9	
9.8	42.3	10.0	
9.8	16 1.1	9.5	
9.0	12.0	40.0	WZ
9.4	12.0	10.4	A
8.8	46.7	58.2	A
9.3	55.1	22.4	
9.8	59.6	23.0	

6281—6320

	23h	—16°	
m	m s	′	
9.3	17 1.4	10.3	
8.7	2.1	5.3	M
9.5	3.4	58.7	
9.8	55.6	36.5	
8.5	18 26.7	56.4	WZ
8.5	32.5	1.4	M
9.5	52.6	51.9	
10	19 2.3	5.1	
9.5	5.9	10.1	
10	19.7	37.5	
7.0	22.5	2.6	B
9.4	20 15.2	33.5	
6.8	22.0	5.6	A
9.0	31.7	51.4	
10	43.1	1.5	
8.8	21 10.9	2.2	
9.6	31.9	2.2	
9.8	33.5	53.1	
9.7	44.1	58.7	
9.3	22 38.1	10.3	
9.3	41.3	28.2	
9.8	23 19.2	32.7	
7.3	20.1	46.8	B
9.0	25.6	3.3	
10	30.4	6.7	
8.9	36.1	19.8	
10	24 27.2	3.6	
9.5	39.6	51.0	
9.7	48.2	36.7	
9.0	25 17.7	23.5	
9.9	54.1	40.8	
10	26 22.2	30.2	
9.6	27 13.2	49.4	
6.0	15.8	2.5	A
9.6	37.7	11.9	
9.5	28 3.2	33.2	
7.0	9.4	5.7	A
10	12.3	23.9	
9.8	30.2	10.1	
9.4	47.4	27.5	

6321—6360

	23h	—16°	
m	m s	′	
10	28 50.6	16.6	
10	50.8	28.0	
9.0	29 8.3	51.0	A
8.0	30 5.4	0.9	A
9.6	25.1	15.2	
9.2	53.9	48.7	
9.5	31 21.5	7.2	
9.8	34.9	35.4	
9.4	32 6.0	0.0	
9.3	35.6	8.0	
10	38.4	25.4	
8.2	42.3	13.0	A
9.6	33 29.5	55.6	
10	31.4	19.2	
9.5	51.0	17.8	
8.8	34 4.3	25.7	
9.5	6.0	46.2	
9.5	16.7	18.1	
9.5	22.5	49.3	
9.1	26.5	55.5	
8.1	27.7	16.0	A
9.5	35.9	50.9	
9.5	36.5	15.3	
9.1	45.0	50.5	
5.3	56.0	15.0	A
9.4	35 12.6	54.8	
9.4	17.1	15.0	
9.5	44.6	35.3	
9.5	46.3	51.4	
9.5	47.2	15.0	
10	36 6.6	31.8	
var	18.7	5.2	B
8.7	30.6	28.0	WZ
9.6	51.5	19.8	
9.7	37 28.8	12.5	
9.0	57.3	8.7	
9.5	38 20.7	41.4	
9.4	36.6	52.1	
9.6	40.8	24.2	
9.8	43.3	6.1	

6361—6400

	23h	—16°	
m	m s	′	
9.7	39 14.1	59.7	
10	34.7	50.3	
8.2	40 6.0	47.1	B
10	6.6	16.2	
9.0	10.3	39.1	
9.5	36.4	9.8	
10	52.3	40.1	
10	41 0.2	59.8	
10	3.9	54.9	
8.4	6.8	0.7	
9.1	30.0	59.4	
9.3	55.9	8.1	
6.3	42 1.3	39.7	A
10	16.3	13.5	
9.9	21.0	21.4	
8.6	43 20.9	55.7	A
10	44 2.0	3.2	
9.0	10.0	10.4	
9.1	45.4	39.7	WZ
9.8	48.7	40.9	
9.3	45 48.0	48.2	R
9.4	59.3	7.2	
8.9	46 16.5	40.4	
9.5	24.1	4.2	
8.6	51.1	26.8	A
9.5	47 41.2	9.1	
9.3	48.3	20.1	
9.6	49 3.6	4.0	
9.6	12.8	16.1	
8.4	54.6	54.0	A
9.4	50 1.2	57.7	
9.4	29.8	23.2	
9.4	35.9	10.4	
6.2	53.1	38.8	A
9.3	51 1.8	19.1	
9.7	23.4	30.4	
9.4	52 3.8	44.5	
9.7	20.5	15.0	
9.8	46.5	59.3	
9.8	53 4.4	25.7	

6401—6405

	23h	—16°	
m	m s	′	
9.4	53 5.4	10.4	
10	37.0	27.2	
9.8	54 7.0	23.9	
9.5	28.7	53.4	
9.3	39.8	57.2	A

6406—6410

	23h	—16°	
m	m s	′	
9.3	55 4.1	32.4	
8.8	8.1	38.7	A
9.5	46.6	24.0	
9.7	56 31.9	2.8	
8.8	53.7	37.9	WZ

6411—6415

	23h	—16°	
m	m s	′	
8.5	57 11.2	42.2	A
9.3	14.0	2.8	
9.3	30.7	30.3	
10	55.2	26.5	
8.2	58 18.8	10.4	A

6416—6419

	23h	—16°	
m	m s	′	
9.7	58 34.2	26.7	
9.6	53.7	33.2	
9.5	59 9.8	41.6	
8.0	42.3	39.0	A

6352: roth

Zone −17°

1—40					41—80					81—120					121—160					161—200				
	0h		−17°			0h		−17°			0h		−17°			0h		−17°			0h—1h		−17°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.3	0	7.7	31.2		9.5	13	53.2	22.1		9.0	27	18.6	54.8		10	37	2.6	52.7		10	48	18.9	4.3	
9.5		20.9	24.5		8.0	14	14.9	0.5	A	9.8		47.3	17.0		9.5		7.5	53.8		9.9		23.6	57.3	
9.4		25.1	54.1		9.0	15	10.9	55.1	WZ	9.8		47.3	12.7		9.4		7.7	25.5		8.9		37.2	9.1	A
9.5		32.8	31.0		9.5		15.5	15.0		9.8		58.7	2.4		9.8		8.3	15.7		9.8		58.7	31.5	
9.2		50.9	55.7		8.0		25.0	22.1	A	8.2	28	33.6	21.9	A	9.9		15.2	14.7		10	49	19.1	27.1	
9.8		58.2	9.9		8.5		34.1	28.6	A	9.0		34.8	27.7	A	10		17.1	35.1		9.0		44.6	51.7	A
9.3	1	54.5	31.1		9.1		35.9	8.9		9.1		48.7	26.4	B	10		22.1	37.4		9.2		54.8	35.9	A
9.2	2	0.4	12.8		9.2		47.7	38.8	A	9.8		56.3	39.2		9.5		33.4	48.6		9.8	50	6.0	42.1	
9.5		51.3	53.4		9.5		47.7	54.7		9.2		58.2	58.7		9.3		33.8	36.2		9.6	51	12.4	35.1	
8.9		55.6	35.4	A	8.6	16	27.6	15.0		8.8	29	9.1	2.9		10	38	2.5	1.9		9.1		15.3	35.0	A
10	3	58.1	40.2		9.0		29.6	22.1		9.4		35.0	6.1		9.1		5.6	29.5		10		38.2	54.1	
9.8	4	23.0	42.3		9.1		47.2	47.7		10	30	11.2	52.7		6.5		25.9	12.9	A	9.6	52	15.3	1.1	A
10		23.7	36.6		9.0		50.7	37.9	A	9.2		27.3	44.1		9.4		37.7	34.4		8.2		54.8	25.9	A
8.7		37.9	37.1		8.6		51.7	34.5	A	9.2		33.4	39.5		7.8		43.9	26.4	A	9.8	53	11.7	45.2	
9.8		59.2	41.0		9.0	17	9.1	1.7		8.0		36.3	28.2	A	9.8	39	13.8	20.5		8.4		20.8	51.3	A
8.9	5	49.1	58.2	WC	9.4		18.6	14.7		9.7		37.5	49.1		9.5		14.7	49.0		9.0		24.3	52.1	A
8.0		50.8	59.4	WC	9.0	18	39.3	0.1	A	9.4		38.8	24.8		9.4		22.5	0.0		8.5	54	0.2	4.3	WZ
9.3	6	18.7	30.9		9.3	19	26.0	37.4		7.8		54.8	2.1	A	10		30.1	21.7		9.2		21.4	50.3	
9.5		42.5	0.6		9.5		37.0	51.7		9.6	31	0.6	13.5		9.1	40	48.8	27.2		9.2		24.8	18.3	
8.5	7	7.2	28.7		9.1		58.4	41.6		9.8		9.2	38.2		9.5		59.4	46.1		6.8		26.1	2.0	B
9.2		19.1	46.0		7.3	20	18.7	12.3	B	9.7		12.7	52.6		9.0	41	47.1	10.9	WZ	9.5		48.5	29.8	
9.0		21.6	57.6	A	9.0		29.1	45.1	WZ	9.8		19.8	55.3		9.2		54.6	10.5		9.8		49.8	45.2	
8.8		42.9	1.8		9.0	21	17.6	0.9	A	8.5		34.9	32.5	A	9.1	42	44.2	38.9		10	55	14.1	39.4	
7.5		53.3	33.4	B	9.8		18.4	40.6		9.7		37.7	51.6		9.4		53.5	47.1		10		41.8	2.2	
9.6	8	21.3	37.0		9.5		31.2	21.5		10		44.3	53.8		9.8	43	39.4	31.9		10		45.0	29.5	
9.7		26.7	25.8		9.5		50.5	37.7		8.5	32	30.2	7.2	A	9.6	44	11.0	59.9		9.8	56	13.6	45.6	
10		58.7	57.1		9.4		54.5	38.7		9.5		43.1	52.0		10		12.9	24.5		9.0		22.9	21.5	A
10	9	0.9	1.0		9.8	22	18.2	10.4		9.2	33	10.8	17.0		9.7		13.5	8.0		9.1		38.5	58.7	WZ
9.4		8.7	14.2		9.4		38.1	9.4		6.5		12.0	18.6	A	9.0		22.9	52.1		9.4	57	0.0	26.2	
9.7		17.3	0.1		8.1	23	58.1	35.5	A	9.4		16.3	27.7	A	9.0		33.9	51.9		9.1	58	30.1	22.5	A
9.2		32.2	23.7		9.1	25	10.9	33.0		9.4		44.1	10.4		10	45	10.0	58.4		9.7		48.7	33.2	
9.4		54.0	27.6		9.7		24.3	47.6		9.4	34	22.3	7.5		9.2		50.8	13.8		9.5	59	14.2	30.3	
10	10	40.0	1.0		9.4		49.3	43.9		9.1		25.0	10.3	A	9.3	46	34.2	32.8		10		16.1	54.6	
9.8	11	2.3	15.1		10	26	7.0	16.3		9.5		51.7	45.8		9.2		36.9	17.1		9.8		36.0	36.2	
8.5		19.3	50.3		9.1		19.4	43.5		9.8	35	18.6	1.9		9.3		37.7	19.2		8.8	0	32.0	15.9	
9.4		23.9	28.8		9.3		24.1	28.4		8.3		20.2	30.4	A	10		49.8	48.9		9.3	1	2.1	20.1	
9.8		46.3	12.9		9.0		39.1	26.1		9.3		28.2	42.7		8.5		57.4	13.3		9.4		4.4	11.7	
9.0	12	42.2	4.1		9.0		50.2	31.1	A	9.5		41.6	20.2		10	47	47.1	37.4		8.3		30.6	50.1	WZ
9.5	13	25.5	23.0		9.2		52.0	38.5		9.5	36	13.5	58.5		8.0	48	0.4	45.3	A	10	2	29.5	36.9	
10		51.5	19.7		9.8		52.4	8.5		8.8		32.3	6.6		10		9.9	6.4		9.9		31.5	39.8	

61: 19:16 12′48″.4 B_4, Ep. 1871.99

201—260				261—320				321—380				381—440				441—500			
	1h		—17°		1h		—17°		1h		—17°		1h—2h		—17°		2h		—17°
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.8	2	33.4	54.5	8.9	19	21.4	17.0	10	41	14.7	34.6	7.7	56	28.9	43.8 A	9.0	10	55.6	31.9
9.5	3	11.2	44.2	10	20	19.2	58.3	9.0		46.7	37.9 A	9.8	57	3.8	7.7	8.5	11	7.4	28.1
9.8		15.3	31.0	9.0		33.5	49.7 A	10		53.8	11.6	8.8		44.9	5.0 A	8.5	12	8.1	23.0 A
7.2		15.4	4.8 A	10		39.7	42.4	9.0	42	17.5	22.9 A	7.3		51.7	59.0 A	9.7		20.2	29.7
9.8		18.8	0.8	9.4		40.2	2.1	10		36.3	13.8	9.7		57.6	47.2	10		31.2	33.0
8.6		31.8	56.0 A	9.2	21	28.5	50.5	10		51.2	33.7	10	58	18.2	2.4	9.4		43.7	7.6
9.5		47.7	22.4	10		35.5	47.1	8.9		53.6	29.7 A	9.6		32.1	53.1	9.1		57.1	0.5
9.5	4	38.9	8.9	9.7		56.2	57.2	9.9	43	27.4	23.1	9.5	59	21.0	47.9	10	13	9.9	6.4
9.8		53.8	25.0	9.1	22	9.3	59.0 A	9.5		51.8	36.2	9.4	0	1.5	12.9	9.5		46.2	53.8
9.3	5	31.8	21.4 A	10	23	18.8	55.6	8.2	44	28.9	27.4 B	9.5		21.2	57.2	9.8		47.8	15.1
9.3		54.0	27.4 A	9.1		31.6	23.5	8.8		32.1	42.4	8.8		39.5	0.3 A	9.7	14	18.8	57.1
9.2	6	5.3	41.7	9.1		58.7	22.7	8.7		40.0	1.3 A	9.5		45.9	41.7	8.7		21.0	46.7 A
9.8		37.5	2.5	8.8	24	28.6	15.3	9.8	45	17.2	31.1	9.1	1	0.3	40.4	9.0		43.7	3.2
10		40.6	41.3	8.0		29.8	31.0	9.4		35.3	37.0	8.5		3.5	31.7	9.7		46.3	33.8
9.8		40.7	22.2	9.8		41.6	48.5	9.5		39.7	52.1	9.8		6.6	3.9	8.8		50.9	37.4 A
9.8		41.2	8.4	9.5		46.5	10.2	6.2		54.0	38.3 B	8.8		15.3	9.3	9.4		52.3	0.6
10		46.1	38.1	9.0	25	6.4	36.3	9.5		54.9	3.1	9.3		29.4	39.5	7.5	15	26.0	9.8 B
9.3		55.7	39.7 A	9.4		18.5	10.9	8.0	46	2.6	12.0 A	9.3		31.4	44.8	9.8		34.3	40.0
9.5		57.7	11.5 A	9.6		27.4	2.8	9.7		3.6	29.6	8.3	2	7.6	20.2	10		35.5	35.5
9.6	7	13.0	29.8	8.6		45.5	8.2	8.2		9.6	27.1 B	9.8		10.4	1.9	9.6		43.4	43.5
9.3		19.6	37.9 A	9.7	26	1.3	46.4	9.3		20.2	0.1	9.7		20.9	38.6	9.6		46.0	44.9
9.3		26.0	52.4	9.7		4.3	50.6	9.0	47	8.4	45.6 A	7.8		36.4	38.9 B	9.6	16	10.5	13.5
10		40.6	0.2	9.9	27	28.0	59.0	9.7	48	4.2	51.3	10	3	20.3	12.2	9.0		22.6	5.7 A
9.8		59.5	51.0	8.9	28	25.1	32.4	9.5		17.3	11.3	8.5		20.8	53.1 A	9.0	17	20.3	53.5 WZ
9.4	9	2.3	58.8	9.8		43.7	7.1	9.9		37.1	23.1	9.0		23.7	24.3 A	9.3		36.7	3.4
8.5		23.1	23.1 A	9.7		49.8	20.9	9.8		50.0	41.6	9.6		44.4	0.9	10	18	4.3	43.6
8.7		37.1	28.2 A	9.8		54.1	32.3	9.3		51.9	5.8	8.7	4	15.9	35.4 A	10		11.8	45.7
9.5		41.4	56.2	9.2	29	7.8	17.5	8.8		53.1	50.7 A	9.8		19.8	55.3	9.1		58.3	21.7 A
7.5		53.5	51.0 A	9.7		8.0	58.2	8.5		56.9	55.5 A	9.6		31.3	43.6	9.8	19	31.5	53.8
9.4	10	13.1	2.2	9.3		37.2	8.9	9.8	49	0.2	27.7	9.7		41.5	2.1	8.6		37.4	23.8 A
9.0		31.4	12.3 A	9.8		52.9	41.5	8.5		3.4	40.2 A	9.8		58.2	22.0	9.7		48.4	51.9
8.2	12	43.5	47.6 A	9.1	30	8.9	0.4 A	9.2		10.3	33.6 A	9.5	5	10.9	22.8	8.7	20	1.6	49.0 A
9.9		55.3	28.5	9.8	31	3.5	41.4	10		26.5	11.4	9.0		15.2	4.5 B	9.6		12.6	16.1
8.9		57.9	36.8 A	9.7		30.7	35.8	9.2		40.1	1.1	9.5		35.8	51.3	9.5		52.4	1.8
10	13	16.0	8.0	9.9		47.4	15.0	10	50	3.6	12.4	8.5		36.2	4.5 B	9.3	21	53.6	47.6
9.2		17.5	37.2 A	9.8	32	14.0	45.9	10		6.7	2.3	9.5	6	3.0	58.5	9.7	22	13.1	15.8
9.8		51.6	21.0	9.1		18.3	59.1 A	7.5		16.5	7.9 A	10		30.9	24.7	8.5		28.0	54.3 A
9.2	14	18.8	30.5 A	9.9		43.8	50.5	9.9		25.7	21.5	9.6		37.6	8.1	9.5		54.3	9.1
9.1		26.1	14.7	9.5	33	14.4	50.8	9.5		43.1	19.3	8.3	7	3.5	14.4 A	9.7	23	12.5	2.9
10		33.4	29.8	8.0		14.6	43.3	10		48.2	57.0	9.5		7.4	53.7	8.0		15.7	37.7 A
9.9		55.3	37.0	7.5		32.7	1.3 A	9.7		48.3	4.3	9.9		7.4	21.5	8.8		26.9	6.4 A
9.8	15	4.9	51.5	10		34.2	50.0	9.5	51	18.4	13.1	8.0		10.5	33.9 A	9.2		39.2	39.2
10		15.7	55.5	8.8	34	40.7	45.1 A	9.8		45.6	14.6	9.5		22.4	21.1	10	24	27.5	28.6
9.3		36.0	3.6	8.5		59.3	54.3 A	9.5	52	57.3	18.5	10		34.9	18.4	9.4		33.4	37.5 A
10		47.2	49.2	9.4	35	52.6	19.2	9.5	53	14.5	38.5	9.8		47.4	36.7	9.3		46.6	23.0
9.5		48.6	8.6	9.1	36	11.8	33.7 A	8.7		19.2	3.2 A	9.5		57.7	26.2	9.4		59.7	50.7
7.5		56.5	14.4 A	9.7		51.3	12.6	9.5		51.9	30.6	9.6	8	10.5	56.4	9.3	25	11.0	6.5
7.0		56.5	19.4 B	9.2	37	4.2	48.5	9.5		59.6	53.3	9.9		10.8	30.5	9.8		44.2	55.5
9.3	16	35.8	17.0	8.2		37.7	33.8 A	10	54	2.0	13.9	8.6		19.5	2.7	9.9		45.5	23.7
9.6	17	11.6	32.4	9.0	38	19.6	12.7	9.2		49.1	39.1 A	9.3		24.5	5.5	9.2		47.2	29.9 A
9.8		19.5	15.5	9.3		22.5	10.3	7.3	55	0.6	16.1 B	9.8		27.1	41.5	9.5		47.8	22.1
9.1		26.7	0.1	9.3		33.2	53.7	9.5		2.0	57.0	9.6		42.9	11.9	10	26	17.0	56.0
8.9		32.7	12.1 WZ	9.4	39	3.1	59.8	9.1		14.8	16.6 A	8.3	9	7.4	17.2 A	10		34.0	39.0
9.6		46.3	55.5	9.5		19.1	7.6	9.5		15.0	58.3	9.8		26.0	51.9	9.0		47.6	15.0
9.1	18	5.6	37.5	9.2		27.2	1.8 A	9.2		16.0	2.2 A	10	10	23.5	48.9	9.6		57.9	43.9
10		6.5	28.6	9.2		33.9	21.9	9.2		34.3	3.7	10		26.9	42.2	10	27	34.2	40.8
9.8		6.9	6.3	9.5	40	32.6	37.9	9.8		57.6	35.5	9.7		31.6	54.9	10	28	0.4	17.3
8.8		8.0	39.9	9.1		34.5	33.0	9.4	56	0.3	1.1 A	9.6		52.1	22.3	7.2		15.3	55.3 A
10		50.1	33.3	8.0		39.0	56.3 A	9.8		24.5	18.8	9.4		52.7	47.6	9.8		18.7	40.6
9.3	19	7.9	45.6	9.4		46.1	32.4	9.5		25.9	52.0	8.7		53.1	0.1 A	9.4		56.2	14.2

501—560				561—620				621—680				681—740				741—800			
2h		—17°		2h—3h		—17°		3h		—17°		3h		—17°		3h—4h		—17°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.0	29	11.2	18.2	9.2	46	52.0	40.7	9.7	6	42.9	26.4	9.1	23	40.9	15.9	9.4	43	42.5	18.6
7.9		17.7	46.5 A	9.6	47	31.9	51.1	9.7		57.8	40.6	9.7	24	2.5	51.0	8.7		53.8	7.7
8.9		37.9	45.4 A	8.6		47.6	22.8 A	8.5		58.9	34.9 A	7.5		24.4	39.8 B	10	44	57.7	40.1
9.5		46.8	21.4	10		52.0	35.3	10	7	3.7	49.1	8.9		29.7	6.6	7.2		57.9	36.5 A
8.6	30	4.7	18.4 A	9.2	48	41.0	40.7	9.6		6.5	35.0	7.0		45.8	16.6 B	9.0	45	9.8	34.8 A
9.1		33.0	10.4 A	10		49.4	14.4	9.2		21.6	38.9 A	9.3		56.4	40.3 A	8.5		43.1	58.1
8.5	31	15.7	47.2	9.3	49	8.7	3.5	9.4		22.4	8.6	9.6		59.8	42.0	9.0		55.7	21.4 A
9.8		31.5	58.5	8.7		12.8	33.6 A	9.1		24.0	58.3	9.6	25	28.4	16.8	9.4	46	16.4	8.4
9.1		53.6	8.3	9.8		36.3	31.1	8.5		33.0	12.4 A	8.7	26	12.2	17.5 A	9.3		17.1	31.5 A
9.7	32	19.0	44.7	9.5	50	10.1	14.9	8.3	8	49.1	5.4 A	9.2		23.9	58.5	10		33.0	27.3
10		31.4	53.0	8.8		24.7	12.2 A	7.5	9	4.4	21.9 A	9.7		39.8	40.6	9.8	47	20.2	23.5
9.9		35.8	27.3	9.3		25.2	30.4	10		24.2	5.4	8.8		54.1	26.5 B	8.3	48	11.5	47.5
9.8		42.8	18.0	9.2		27.8	45.1	9.4		34.4	1.1	9.8	27	1.9	43.5	10		12.8	29.5
9.3	33	22.7	4.2	9.8		39.9	43.7	9.3		36.4	10.1	9.8		18.6	44.2	8.1		13.3	54.2
9.3		33.7	40.8	9.8		50.2	22.3	9.6		43.3	55.4	9.1	29	3.3	5.4	7.5		13.7	26.5 A
9.0		51.1	59.8	9.2	51	12.2	47.0 A	9.5		59.4	50.2	9.0		15.6	42.1	8.9		51.6	17.0 A
9.9	34	1.0	54.3	9.6		58.2	37.5	9.4	10	36.9	11.2	8.3		31.2	34.4	9.5	49	28.1	12.5
10		29.6	36.5	9.3	52	16.0	54.5 A	10		40.4	54.4	8.8		35.5	47.8	9.9		51.7	44.9
8.0		39.5	24.4	9.1		45.7	59.7 A	9.4	11	3.7	31.9	5.0		41.0	56.6 L	9.7	50	2.6	59.9
9.8	35	22.6	37.5	8.0		57.6	18.4 B	9.1	12	11.0	18.6	9.3		41.0	14.7	8.7		50.7	57.4 A
9.5		31.3	44.2	9.1	53	12.7	1.9	8.0		43.0	57.2 WZ	9.4		57.9	44.2	9.2	51	4.6	10.0
9.1		46.5	22.0	8.5		13.1	16.7 B	9.5		51.7	45.8	9.8	30	42.4	3.4	9.8		7.2	17.1
9.3	36	13.5	14.7	10		42.7	14.7	9.4	13	11.3	17.1	10		43.2	8.7	9.8		15.4	28.9
8.9		18.1	33.0	9.1		59.1	55.0	9.6		13.1	59.7	9.8	31	21.9	39.3	9.5		27.1	37.8
10		58.6	30.0	9.3	54	28.4	47.4	10		22.4	40.8	9.6		22.3	13.4	8.6		40.7	47.8
9.6	37	27.8	8.8	9.1		33.9	24.1	9.5		26.1	44.7	9.5	32	7.7	28.9	9.0	52	24.3	39.0
9.9	38	26.8	56.9	7.5		37.4	48.4 B	9.6		51.9	7.5	6.8	33	0.6	50.1 A	9.1		58.8	14.9
9.6		49.5	15.8	9.4	55	9.6	9.7	8.9	14	19.0	18.3	10		7.1	20.4	9.4	53	2.5	31.9
9.0		56.7	4.3 A	9.8		56.2	51.0	9.8		31.8	45.6	8.8		23.5	7.2 A	9.4		7.3	48.2
10		57.2	37.7	9.4	56	28.7	29.3	10		57.8	42.5	9.8		36.7	56.0	9.3		8.6	59.8
9.4		58.3	58.0	9.9		46.3	31.0	9.2	15	5.8	2.2	9.3	34	21.0	0.4	8.0		14.9	12.2
9.6	39	9.9	42.7	9.3		46.7	40.9	9.5		16.4	7.0	9.0		36.6	50.0	9.1		25.5	3.8
10		42.8	36.1	9.7	57	3.4	44.7	8.9	16	10.7	21.7 A	8.5	35	14.0	31.1	9.5		41.6	1.2
10		43.8	12.7	9.3		45.7	10.7	6.0		39.9	57.1 A	9.4		22.5	6.9	8.5	54	1.9	24.6
9.3	40	38.6	13.8	9.2		50.1	43.3	9.4	17	7.0	5.0	7.5		27.7	36.6 A	8.6		13.8	31.0
9.0		41.9	58.9 WZ	9.7	58	40.0	25.9	9.8		10.5	53.5	9.4		32.6	37.5	8.0		28.5	46.7 B
9.4		45.0	3.6	6.8		47.8	10.2 B	8.8		22.7	48.8 A	9.7		33.6	47.7	9.8	55	23.5	47.9
9.7		52.2	49.0	9.1	59	2.0	24.8 A	9.5		26.3	27.7	8.6		45.2	39.3 A	9.5		29.0	26.0
9.4	41	18.8	56.0	9.5		38.2	35.0	9.4		32.7	59.3	9.8		45.6	8.5	9.9		30.4	39.0
8.0		53.3	25.0 B	9.9		39.3	2.0	10		53.6	13.6	10	37	0.8	54.0	10		38.2	40.3
9.7		55.0	42.3	9.5		45.3	50.7	9.4	18	1.1	53.8	9.4	38	34.9	14.6	9.5		59.6	59.0
8.9	42	35.5	25.5	9.0	0	30.7	4.7	9.5		16.5	40.1	9.5		58.4	18.2	9.3	56	15.1	8.3
8.5		35.8	45.6 A	9.2	1	12.4	54.5 A	9.5		43.0	5.1	8.0	39	2.2	36.1 A	8.9		22.3	19.9 A
8.8		40.8	5.5 A	9.4		30.0	3.2	9.1		54.8	22.9	8.6		20.3	12.5	9.8		30.9	21.0
9.0		47.3	17.3	10		41.2	30.7	9.2	19	11.5	6.4	9.4	40	2.3	41.5	9.4		59.8	37.7
9.7		50.7	13.6	9.5	2	5.9	42.6	8.6	20	0.7	48.0 WZ	9.5		5.0	15.9	9.4	57	1.2	14.0 A
8.0		57.8	53.5 A	10		27.3	32.1	9.0		14.8	22.4	9.0		5.7	58.2	9.9		13.1	18.0
9.4	43	58.6	15.7	9.5	3	4.2	37.3	9.1		50.2	4.7	9.4		31.4	59.7	9.2	58	12.9	15.1 A
10	44	7.9	58.1	9.3		13.3	50.3	9.4	21	42.8	58.7	9.4		51.6	36.9	9.1		37.3	14.0 A
9.6		39.7	39.2	9.8	4	1.1	13.6	9.4	22	10.7	58.6	7.7		56.4	58.4 A	9.5		48.2	36.8 A
10		56.0	2.0	8.8		10.0	42.3 A	9.0		11.8	59.2	9.8	41	16.3	13.7	9.7	59	1.3	43.6
9.8	45	0.7	48.7	8.8		29.0	37.0 A	9.4		13.5	32.7	9.0		32.3	8.3	10		21.2	36.7
9.8		4.2	5.6	8.6		31.8	59.2 WZ	9.7		35.6	32.0	9.3	42	6.8	48.0	9.0	0	42.8	13.2
7.3		5.1	51.0 A	8.0	5	0.1	7.7 A	9.1		37.1	33.6	8.9		51.9	53.8 A	9.3		50.6	41.3
10		18.5	28.5	9.3		44.7	9.8 A	9.5		42.0	57.6	8.9		52.2	5.3	9.8	1	1.4	47.2
10		37.3	6.3	8.6		54.2	19.6 A	9.9		47.0	41.4	9.2	43	4.1	23.2	9.0		5.1	25.1
7.0	46	0.9	12.5 B	9.4		55.9	22.5	8.0		54.6	30.0	9.8		5.5	40.7	9.1		40.9	4.5 A
9.4		20.4	15.9 B	9.8	6	6.1	47.0	8.5	23	20.5	27.3	7.9		33.4	13.4 B	10		41.0	2.9
9.8		35.2	5.4	9.8		19.9	28.7	9.7		22.9	57.3	8.0		35.2	5.1 B	8.5		47.9	38.5 B
9.6		44.5	51.3	9.5		38.0	32.3	9.9		28.3	55.6	9.4		39.9	13.0	9.8		48.6	23.1

801—860				861—920				921—980				981—1040				1041—1100			
	4h	—17°			4h	—17°			4h	—17°			4h—5h	—17°			5h	—17°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
7.7	2 30.5	59.9	B	9.2	14 56.3	51.4		7.7	31 38.7	1.0	A	9.8	46 59.0	11.7		8.8	4 53.6	13.7	
9.3	33.0	12.8		9.5	15 3.7	13.3		9.6	56.1	4.9		9.5	47 10.3	39.2		9.4	5 5.0	50.2	
9.3	33.4	10.5	A	9.9	9.1	35.6		9.2	32 6.5	12.9		8.9	31.2	49.0	A	9.7	19.2	17.8	
9.2	54.2	28.4		9.0	39.9	23.8	A	10	49.3	34.9		8.7	37.2	14.1	B	9.4	34.0	53.7	
8.1	57.1	51.0	B	9.7	16 25.4	49.4		9.5	54.9	37.3		9.3	48 1.0	2.0		9.0	41.4	26.4	
8.5	3 2.3	53.0	B	10	50.1	51.0		9.7	56.1	48.4		8.8	7.4	21.0		8.5	6 4.2	37.7	A
9.0	6.0	16.3	B	8.5	17 6.2	53.5	B	7.3	33 13.4	15.0	B	9.4	47.6	50.4		8.6	7.2	37.8	A
10	19.6	47.6		10	17.4	20.8		8.5	57.5	58.1	A	9.5	49 1.7	40.7		10	24.4	15.1	
9.5	46.4	13.4		9.1	23.0	5.4		9.8	34 14.7	42.3		9.7	3.4	52.0		9.4	24.6	21.2	
9.0	4 10.8	32.0	A	9.3	44.1	26.8		9.6	49.9	53.9	A	8.5	6.8	59.7	A	9.9	32.9	28.8	
9.3	21.4	13.0		9.8	18 9.7	33.6		9.3	35 2.0	1.6		8.8	31.6	35.2	A	8.2	50.2	46.1	A
10	41.7	20.8		9.5	17.3	40.0		9.7	19.3	27.7		9.1	34.3	22.5	A	8.0	55.7	5.0	
9.6	42.6	37.7		10	18.0	36.1		9.2	51.9	11.4	A	10	43.2	13.6		9.6	7 6.2	1.1	
9.0	45.7	13.6	A	10	35.2	7.9		10	36 2.9	45.4		6.8	46.7	58.0	A	7.3	6.7	16.5	
9.7	5 9.6	55.7		8.2	19 0.7	31.1	A	9.3	35.4	44.5		9.7	50 28.9	22.3		9.8	20.0	4.2	
6.3	28.4	39.1	B	9.1	25.7	34.3	A	9.3	37 5.0	27.0		9.3	30.1	44.2		9.7	50.4	46.5	
10	30.5	53.9		9.0	47.4	2.3		9.2	21.5	53.6		9.4	38.3	19.1		9.8	55.2	34.8	
10	30.5	42.7		10	50.6	25.8		9.0	24.8	41.4		9.9	51 1.2	13.0		9.2	58.2	45.6	
9.3	33.8	42.7		10	20 0.4	29.9		9.7	38 23.6	56.7		9.3	13.7	31.4	A	9.2	8 3.8	23.9	
9.7	57.2	3.2		9.1	42.8	54.5		9.7	23.7	11.2		9.7	19.9	0.1		9.8	5.9	3.2	
8.8	6 9.1	2.1	A	9.3	50.5	22.5	A	9.7	30.4	50.8		7.0	41.3	0.3	A	9.8	8.5	21.8	
9.0	20.5	8.6	A	9.5	54.8	37.0		8.8	34.1	39.1	B	9.6	41.6	36.3		9.8	13.4	23.1	
9.0	43.5	11.0	A	8.0	21 0.6	26.0	A	9.5	49.7	49.9		9.7	52 9.5	42.1		10	58.9	25.4	
9.4	55.8	43.7		9.8	4.9	58.2		9.5	57.6	56.0		9.8	40.8	55.5		9.8	9 22.2	43.4	
8.5	7 11.8	51.0	A	9.6	6.9	42.4		8.5	39 5.9	35.2	B	9.8	53 25.9	31.5		10	52.6	33.0	
9.5	18.9	30.3		9.8	27.2	34.5		9.2	28.4	43.2		9.1	59.8	5.1	B	9.8	10 2.0	54.0	
10	28.2	19.2		9.8	41.2	4.1		9.5	47.9	30.9		9.7	54 1.0	1.8		9.7	2.0	7.2	
9.8	36.6	44.0		9.9	51.4	22.7		9.7	40 6.9	43.3		9.7	12.4	34.2		9.4	18.9	14.1	
9.1	42.4	52.2	A	9.1	59.0	43.9	A	9.0	22.5	13.1	A	8.0	17.8	48.0	B	7.0	21.7	18.4	A
9.6	50.3	28.0		9.4	22 4.1	47.7		9.3	28.5	13.1	A	9.5	25.0	27.2		9.8	29.0	27.5	
9.7	51.6	17.1		9.5	23 7.8	33.4		9.1	44.9	30.8		7.3	53.5	45.6	B	8.9	40.0	18.8	A
10	56.0	20.0		8.5	46.7	11.2	B	9.0	47.2	30.6	A	9.5	54.4	50.0		8.8	40.4	36.9	
8.8	8 52.6	16.1		9.0	24 1.4	39.7		9.2	49.1	13.7	A	9.8	55 21.4	23.8		7.0	57.6	55.7	
10	9 8.9	48.4		9.6	14.6	40.2		5.5	41 6.0	12.4	A	9.3	56 28.7	23.2		10	11 7.4	4.6	
9.3	10 20.4	26.8		10	28.3	57.5		9.5	17.2	20.7		9.8	57 25.8	28.3		10	21.5	29.5	
9.0	24.9	25.5		8.3	28.9	12.6	A	9.8	22.3	26.2		9.1	47.9	31.6		9.5	22.3	31.1	
8.4	38.2	48.5	A	9.2	34.3	35.8		9.5	35.5	39.9		9.8	53.6	21.1		9.5	25.9	1.2	
9.5	50.6	10.3		9.4	25 8.0	14.3		9.5	42 15.7	9.4		9.0	58 22.3	52.1		8.3	40.6	31.8	A
8.0	11 13.0	5.4		10	22.2	35.4		9.4	15.9	19.4	A	9.4	46.1	17.9		9.1	45.0	28.9	
8.8	21.7	19.9	A	8.6	39.2	51.6	A	8.2	29.3	23.7	A	9.2	59 28.4	18.3		9.1	12 10.1	53.4	
8.2	29.3	25.4	A	9.4	50.4	52.4		10	38.4	46.0		9.0	39.6	38.4	A	8.0	20.3	43.3	A
10	42.2	6.2		8.2	56.6	34.7	A	9.8	48.2	4.7		9.0	57.9	0.9		9.3	32.1	32.0	
9.8	42.5	16.8		9.6	26 36.7	4.2		9.4	49.3	34.8		9.3	58.8	28.6		8.9	35.0	7.6	
9.0	57.5	32.4	A	9.5	41.0	36.5		9.8	43 34.5	22.3		10	0 1.0	56.4		9.0	49.3	16.1	
10	12 6.5	47.1		8.5	27 13.2	46.8	A	10	37.2	41.1		9.8	9.7	49.3		8.9	59.2	54.0	
9.7	12.9	0.9		10	44.0	13.2		9.8	46.6	12.7		10	25.4	42.8		9.8	13 0.7	37.3	
9.1	23.1	53.7		8.1	59.5	12.7	A	9.5	44 22.5	34.2		9.3	38.0	23.7		9.0	25.2	14.0	A
9.5	33.1	55.4		9.5	28 13.7	43.2		9.3	33.2	58.5		6.5	41.4	29.5	A	9.9	29.3	37.2	
10	54.3	45.3		9.0	14.4	7.3	A	10	44.0	6.0		7.0	1 16.1	28.6	A	8.5	50.8	50.4	
9.1	13 9.1	55.0		9.2	29.6	45.5	A	9.1	50.2	17.6		8.5	25.3	25.2	A	9.6	55.1	28.1	
9.8	10.8	20.5		9.5	29 8.0	59.2		9.3	57.0	30.7		8.0	2 7.9	31.3	A	9.5	14 19.9	39.3	
9.6	12.3	13.6	A	10	27.7	11.4		9.7	58.3	42.4		9.3	35.2	58.5		9.3	22.6	30.6	
9.0	22.5	17.3	A	7.2	50.8	44.9	A	10	45 12.7	46.3		9.0	54.0	22.6		10	28.1	1.9	
7.2	23.6	49.0	B	9.0	53.9	28.8		8.8	18.2	2.6		9.1	3 35.5	13.4		9.4	30.2	33.2	
9.1	54.9	25.0		9.8	30 3.5	44.2		9.3	32.2	18.1		8.8	36.0	12.5	A	9.6	33.7	46.4	
7.0	14 9.0	10.7	A	9.9	4.5	34.2		9.2	52.2	56.7		10	55.4	1.5		9.0	49.5	28.1	
8.9	13.9	48.7	B	9.0	20.9	50.4	A	8.7	46 8.3	6.9	B	9.5	56.3	25.2		9.6	15 12.0	13.9	
9.9	39.3	17.2		9.8	41.2	44.0		8.4	33.9	12.7	B	9.9	4 28.7	54.4		6.8	30.0	45.1	A
9.5	52.2	36.7		8.0	31 19.5	42.2	A	9.4	34.5	59.2		9.6	37.8	46.1		10	32.1	4.0	
9.2	54.4	20.6	A	10	29.2	13.4		9.4	52.6	18.8		9.8	39.1	44.4		9.3	37.5	48.6	

805: 57ᵗ12 51′37″0 B_4, Ep. 1872.36

1101—1160				1161—1220				1221—1280				1281—1340				1341—1400			
	5h	−17°			5h	−17°			5h	−17°			5h	−17°			5h—6h	−17°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	16 10.6	40.0		9.6	25 21.4	17.2		9.1	36 34.3	51.5	A	8.8	47 43.3	8.2		9.5	57 39.8	23.7	
9.8	10.8	15.5		8.0	36.3	52.5	L	10	37 0.2	5.5		10	50.4	56.1		9.5	58 7.4	7.0	
8.5	13.5	24.9	A	10	40.9	37.1		9.8	6.0	39.5		9.5	51.1	52.5		10	11.0	4.3	
9.3	14.8	16.6		8.9	41.1	40.4		9.8	17.5	16.7		8.2	48 5.4	48.4	A	7.0	23.5	56.9	A
9.8	18.5	5.7		9.1	26 11.1	47.9		9.3	37.9	35.2		9.2	8.6	43.9	A	10	41.1	43.6	
10	29.1	17.1		3	20.2	55.4	B	9.1	43.2	4.0		10	16.8	41.5		10	50.4	27.5	
9.0	31.3	16.5		8.0	35.0	21.9		10	49.6	18.7		9.9	30.2	3.2		10	59 2.4	9.9	
8.3	41.9	21.3	A	9.0	38.8	2.8		9.8	38 7.4	12.4		9.0	37.8	0.3	B	9.7	5.9	27.3	
9.3	51.9	19.7		9.8	56.9	48.1		9.2	18.0	49.8		10	38.6	14.0		8.8	14.8	13.2	
9.4	52.4	21.0		8.2	27 16.4	53.2	WC	9.0	20.1	29.4		9.7	39.5	16.1		9.9	28.0	26.7	
9.6	17 8.4	40.8		9.3	18.0	32.3		9.0	25.6	19.1	A	10	48.6	38.5		9.4	38.3	7.5	
9.3	19.6	30.5		9.5	52.1	0.0		10	26.4	12.8		9.1	49 7.0	57.0		9.1	48.0	34.5	A
9.3	24.5	1.2		8.8	52.8	15.3		9.5	39 1.5	43.8		9.4	8.9	13.4		9.8	0 18.5	34.2	
9.7	28.5	46.8		8.4	28 11.4	39.1	A	10	16.6	23.1		9.5	10.1	17.5		9.3	27.7	3.0	
9.1	58.5	57.2		10	18.9	17.9		8.8	20.8	28.4	A	10	19.3	32.2		9.7	28.4	43.7	
10	18 0.4	43.4		9.6	35.3	24.0		9.8	27.2	45.0		10	20.4	34.6		9.8	28.8	32.6	
6.3	1.6	6.7	A	10	37.0	20.5		9.4	32.7	13.9		9.3	32.7	20.4		9.8	33.4	54.9	
9.6	4.2	27.9		9.8	44.4	55.6		10	40 13.1	42.3		8.4	44.9	54.5	A	10	41.6	22.1	
10	19.4	40.0		9.1	53.3	18.5		9.2	16.3	47.1		9.8	46.8	4.0		9.2	45.2	45.1	A
8.6	24.3	14.8	A	9.7	55.8	30.3		10	22.3	6.1		8.0	52.0	15.9		8.5	52.7	47.9	A
10	37.7	8.1		9.5	29 1.6	16.4		9.4	22.8	10.8		10	55.5	58.4		9.1	1 15.8	31.2	
9.8	45.4	21.7		9.2	9.0	45.4		9.4	44.4	55.1		9.0	50 0.5	18.0		9.0	16.0	35.9	
10	46.8	11.4		10	21.9	11.9		9.6	41 9.9	42.4		8.9	1.3	51.2	A	9.3	25.2	18.1	
9.2	19 1.8	39.5		10	36.9	2.2		9.5	13.1	39.8		9.2	9.2	26.0		9.0	26.4	16.7	
10	28.7	33.4		9.5	30 18.8	55.6		9.8	21.8	30.4		9.7	10.4	49.5		9.2	28.0	19.6	
10	44.3	37.2		8.5	27.3	6.6	B	9.8	30.9	41.3		9.7	22.9	41.8		9.1	35.3	52.8	
9.7	59.4	45.6		9.0	35.7	16.3		9.9	59.6	46.0		9.5	39.3	31.9		9.5	50.8	12.7	
9.5	20 1.5	46.6		9.6	55.8	41.0		9.3	42 0.7	56.2		10	51 4.6	39.4		9.5	58.9	50.8	
10	3.6	7.4		9.3	58.7	17.4		9.5	25.7	3.5		9.0	8.8	8.4		9.4	2 2.3	40.2	
9.4	10.6	1.2		9.8	59.6	13.9		9.8	44.9	35.0		9.8	19.1	53.2		9.5	4.8	13.1	
9.1	11.7	0.5		9.0	31 17.3	31.5		9.6	49.3	10.8		10	29.8	19.4		9.0	5.5	19.3	
9.5	33.3	36.6		9.2	19.8	54.2		9.2	50.9	3.0		9.2	32.8	24.8		9.3	12.1	20.9	
9.5	34.8	24.3		9.9	37.6	9.4		8.5	59.0	37.9		9.4	42.5	41.5		9.5	15.8	3.5	
9.1	40.7	18.5		10	49.5	50.1		9.1	43 1.6	7.5		9.4	58.4	26.3		10	32.7	44.5	
9.1	41.5	45.4		9.9	56.6	40.7		9.4	17.7	37.8		9.5	52 2.3	41.0		9.1	35.2	57.7	
9.8	58.9	17.8		7.5	32 9.1	0.4	A	9.3	24.9	1.0		9.8	20.2	43.4		9.2	43.3	13.0	
9.4	21 5.4	44.6		8.0	20.4	9.2	A	10	39.6	42.6		10	25.4	8.5		7.5	51.4	16.0	
10	9.9	58.2		8.3	44.9	55.1	B	10	45.0	48.2		10	28.7	33.7		9.4	3 10.9	25.8	
10	21.2	32.5		6.7	53.5	56.0	B	9.1	56.2	48.4		8.8	53.4	55.3		10	11.8	43.4	
9.8	25.8	45.1		8.3	54.1	54.8	B	8.8	57.5	59.0	A	9.0	59.3	5.8	A	10	15.5	45.8	
9.5	29.7	21.2		9.8	56.0	27.0		9.4	44 4.8	50.4		8.8	53 21.9	5.8	A	10	16.6	45.2	
9.1	22 9.9	16.2		9.3	57.2	33.5		10	7.9	9.9		9.8	50.8	29.2		10	19.1	33.9	
9.3	11.1	26.9		9.0	58.0	56.9	B	9.0	15.3	9.9		10	52.0	45.6		9.5	32.5	1.0	
9.5	17.2	20.8		9.4	33 27.7	7.4		9.5	21.0	16.8		10	54 11.8	38.9		9.1	35.0	22.8	
9.3	34.1	23.7		9.1	46.9	42.9		9.4	47.1	49.4		9.8	19.7	47.3		8.9	4 0.8	31.8	
9.9	34.2	50.6		8.3	50.3	11.2		9.8	45 2.4	10.4		9.5	27.7	23.0		8.9	0.8	11.0	
8.0	35.0	33.0	B	8.9	51.9	1.9		8.0	4.7	56.7	A	8.3	47.9	30.8	A	9.0	24.6	37.4	
8.1	43.1	26.4	A	9.4	34 5.4	23.1		10	20.8	31.6		10	55 4.2	1.7		9.5	33.3	44.4	
10	50.7	40.8		9.1	22.8	6.7		8.7	33.9	3.1		9.0	14.1	18.7		10	33.7	26.7	
9.3	55.4	58.2		10	43.1	19.2		9.5	35.3	47.7		9.3	34.1	7.5		9.4	57.2	32.5	
9.6	23 12.7	41.5		8.0	35 6.9	47.7	B	7.8	47.4	35.6	B	9.2	37.8	51.4		9.5	58.1	34.0	
8.8	17.6	22.7	A	10	9.7	49.0		9.0	59.1	40.0	A	10	56.5	15.7		9.3	5 0.0	0.2	
9.9	33.7	26.7		9.0	26.5	17.7		9.1	46 11.3	46.6		9.3	56 0.6	5.5		8.5	13.6	24.6	A
9.8	38.2	29.8		6.0	50.7	30.4	B	9.9	11.9	16.7		8.6	5.7	51.1		9.8	19.1	39.5	
9.5	59.3	54.4		8.1	36 7.7	5.3	B	9.8	19.2	44.3		9.2	20.5	35.9		9.8	58.7	9.1	
9.8	24 22.7	6.5		8.9	16.3	51.9		9.7	22.4	54.6		9.5	21.1	30.2		10	6 2.9	35.7	
9.3	53.7	38.8		10	20.0	37.9		8.3	49.7	48.7	A	9.2	23.0	48.4		9.5	4.5	58.6	
9.0	53.7	5.0		9.0	24.1	40.7		8.6	47 0.5	18.1		9.3	26.5	24.1		6.5	23.3	43.7	B
9.0	56.7	27.1		9.4	30.7	44.2		10	30.8	25.3		8.5	41.0	48.1	A	9.0	23.8	12.3	
9.5	25 4.2	46.7		10	31.2	14.5		9.2	40.4	12.4		9.8	57 8.6	39.7		9.2	30.4	55.9	

1401—1460				1461—1520				1521—1580				1581—1640				1641—1700			
	6h	−17°			6h	−17°			6h	−17°			6h	−17°			6h	−17°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.6	6 32.7	27.4		8.9	14 54.2	27.4		6.3	25 33.5	57.7	A	9.9	34 29.2	54.5		8.8	43 21.1	24.5	
9.4	41.4	0.2		10	15 9.4	48.3		10	50.7	49.6		8.4	31.0	38.8	A	9.1	21.9	14.0	
9.4	49.6	46.7		9.9	40.6	44.3		9.6	52.8	0.1		8.8	47.5	50.0	A	9.4	36.9	50.0	
10	52.8	31.9		9.4	48.6	45.6		9.0	56.9	31.5		8.5	35 9.1	23.7	A	9.0	47.2	4.9	A
9.1	7 42.1	1.4		9.2	59.4	35.3		10	57.8	28.6		9.9	9.3	6.1		7.3	50.3	7.3	A
9.8	46.0	44.7		9.3	16 13.6	50.1		9.0	26 2.5	58.6	A	9.5	16.4	49.0		9.4	44 6.0	58.1	
8.2	53.2	26.3	A	3	18.9	53.2	A	9.8	7.7	25.3		8.9	23.8	49.7	A	9.7	7.4	2.0	
9.0	59.4	24.8	A	9.0	40.4	7.4		7.8	22.9	36.5	B	8.8	33.8	38.4		9.8	21.0	56.0	
8.7	59.5	47.4		9.4	47.8	31.3		9.5	27.3	9.2		9.9	38.0	58.6		8.7	21.3	8.1	A
9.2	8 0.9	26.7	A	10	17 0.1	3.4		9.8	34.8	51.0		9.1	49.0	20.3		8.0	34.0	41.1	
9.8	7.1	5.2		10	5.0	7.3		10	37.1	5.3		8.9	51.1	14.1		8.7	58.9	52.4	
9.8	15.4	49.7		10	14.5	0.7		9.0	47.5	22.6		8.8	36 5.0	39.7	B	9.8	45 6.3	33.0	
9.3	24.2	40.7		8.8	33.6	22.0		8.7	27 1.0	58.6	A	9.8	18.9	14.1		9.8	16.8	32.1	
10	32.7	27.8		9.6	34.5	40.4		9.4	9.6	46.0		9.4	25.2	41.4		8.3	29.3	4.3	A
9.6	9 19.2	43.4		9.6	34.9	4.1		9.4	22.1	45.5		8.8	40.8	31.3	A	9.4	31.1	25.9	
9.4	22.8	30.9		8.9	46.2	48.6		9.6	23.2	30.6		9.7	51.1	59.0		9.2	35.8	7.6	A
9.5	29.4	46.1		9.4	47.5	26.6		10	31.2	0.4		9.8	52.5	54.1		10	59.7	51.0	
9.3	33.1	4.5	A	10	56.0	9.4		9.5	37.5	59.9		8.7	37 1.9	0.9		9.3	46 0.3	32.6	
9.4	44.0	56.4		9.3	18 2.5	26.6		9.5	57.9	38.5		9.4	9.0	52.4		9.4	0.8	22.1	
9.1	44.3	31.3	A	10	8.3	19.0		8.8	28 8.4	15.7		9.5	9.7	30.2		9.1	15.0	41.0	
8.3	53.4	53.8		9.7	20.5	43.0		9.3	15.3	11.5		9.6	34.2	47.5		9.2	31.7	7.5	A
9.4	10 0.9	26.2		9.1	23.9	34.8		8.5	30.0	54.9		9.5	38.4	14.4		9.8	33.1	34.3	
8.5	7.2	27.5	B	9.1	39.6	45.9		9.1	51.6	39.3		8.2	56.1	41.8	A	8.7	34.2	26.9	A
9.2	9.2	6.5		10	42.9	53.7		9.5	54.9	43.6		8.8	38 19.9	58.2	A	10	47 0.6	16.1	
9.5	19.6	23.2		9.4	19 22.1	51.0		9.5	54.9	46.0		8.6	23.0	17.4		9.5	11.8	6.5	
9.8	43.9	35.7		10	34.3	7.1		9.8	29 8.8	40.4		9.8	25.5	39.2		9.8	21.8	32.7	
10	54.9	53.1		9.8	48.2	19.6		9.2	29.4	46.4		9.0	26.9	36.5		10	33.3	22.9	
9.8	11 10.9	39.6		9.5	48.3	29.6		9.8	36.9	35.0		9.6	40.9	35.0		8.2	40.9	43.6	B
10	24.4	52.6		9.5	48.5	47.1		9.9	36.9	15.2		10	49.1	58.0		9.8	44.5	7.9	
9.9	28.5	46.0		9.1	58.4	50.6		9.4	30 8.7	56.6		8.9	39 2.1	42.0		9.4	53.6	24.1	
9.9	29.0	1.1		9.1	20 16.4	50.3		9.2	13.0	59.5		7.5	13.8	1.3		9.8	55.7	54.8	
9.8	29.5	48.7		9.5	21.6	24.0		9.5	13.6	50.1		10	18.5	58.3		9.2	48 1.8	29.8	
10	31.9	14.5		9.6	22.1	10.6		9.4	18.0	19.4		9.1	29.5	7.3		8.0	10.6	44.1	B
8.8	37.6	13.8		9.0	28.7	54.5		8.8	19.0	6.8	A	9.8	48.9	16.1		10	21.7	27.4	
10	39.6	49.1		9.1	32.1	34.1		9.3	25.6	43.1		9.8	49.2	36.9		9.2	27.6	0.6	A
9.5	40.7	27.5		9.4	34.5	21.6		9.1	27.6	5.9		9.8	54.3	0.1		9.3	29.2	38.4	
9.3	45.2	40.4		9.1	36.5	18.9		10	41.8	12.5		9.5	40 10.2	55.8		9.4	34.7	27.1	
9.9	47.0	58.8		8.5	47.4	35.0	A	10	42.4	19.2		9.4	12.5	17.4		10	46.5	22.0	
10	12 7.5	46.4		9.5	52.7	7.5		9.8	43.5	39.6		8.7	18.3	31.7	A	8.3	48.5	1.7	A
10	37.3	49.3		9.6	21 4.7	47.9		8.7	54.0	49.6		9.0	18.4	35.5	A	9.5	57.3	51.5	
10	47.2	8.9		9.8	22.4	56.2		10	31 1.9	24.3		9.7	19.3	19.6		9.3	59.8	40.7	
9.8	48.3	30.8		9.1	27.9	32.7	A	9.8	2.8	38.9		9.7	41.3	24.4		9.4	49 1.2	26.3	
9.8	51.6	54.2		9.9	32.5	18.4		9.8	29.7	16.2		9.7	42.3	24.4		9.5	11.3	34.3	
9.4	13 5.5	21.2		10	53.8	27.5		8.3	31.9	5.8	A	9.0	42.7	55.1		9.3	15.4	48.9	
9.3	13.6	27.4		8.9	58.3	12.8		9.8	46.0	57.1		9.4	41 7.8	49.7		10	29.2	6.5	
7.0	16.2	28.1	A	6.3	22 11.8	22.4	A	9.1	32 12.6	25.7		7.0	10.7	21.0	A	10	37.0	16.5	
8.5	21.8	30.8	A	9.1	27.8	39.5		9.0	15.5	50.7		9.3	12.1	0.7		9.8	46.9	55.0	
10	33.6	24.7		9.5	33.6	31.6		8.8	16.1	48.2	A	9.5	18.3	1.8		10	48.8	49.0	
8.0	35.2	37.7	A	9.4	41.8	10.3		10	31.1	47.6		9.8	22.5	56.6		8.7	48.8	0.7	A
8.5	57.8	12.9		9.1	55.0	57.2		9.1	37.2	29.1		9.3	41.9	53.8		9.4	51.5	15.5	
9.2	14 10.0	57.1		9.9	55.6	4.8		9.8	46.6	13.3		7.8	42.7	4.2	A	9.8	52.3	54.3	
8.9	17.8	51.0	A	8.0	57.5	43.2	A	9.0	53.8	11.5		9.5	50.2	4.1		9.8	58.2	55.8	
9.8	22.3	31.2		9.0	23 26.7	17.0		9.0	56.9	24.5	B	9.8	51.9	49.3		9.1	50 1.0	22.8	
9.6	25.4	32.9		9.3	46.8	12.7		9.0	33 1.6	25.4	B	8.9	42 23.2	6.3	A	9.8	1.9	15.2	
9.0	28.0	55.0		8.4	24 17.0	49.0	A	9.1	11.9	4.2		9.7	27.8	53.3		10	15.6	47.5	
9.0	34.7	9.7		10	17.9	43.6		10	24.9	28.0		9.3	52.9	52.8		10	24.1	19.4	
8.6	36.4	45.9		9.4	34.6	21.4		9.2	31.1	50.4		9.2	43 3.5	40.1		9.8	28.8	46.7	
8.0	40.5	53.7	B	9.0	25 3.6	23.4		7.8	37.7	9.5	A	9.3	5.6	21.5		9.5	30.6	0.5	
9.3	42.4	32.5		9.6	10.4	48.7		9.6	46.3	0.1		8.8	7.5	33.9		8.1	42.6	22.4	
9.4	51.7	48.6		9.8	12.7	28.5		10	34 7.4	36.1		9.8	15.8	8.1		10	49.3	6.7	

1701—1760				1761—1820				1821—1880				1881—1940				1941—2000			
	6h	—17°			6h—7h	—17°			7h	—17°			7h	—17°			7h	—17°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	50 55.5	17.5		8.5	58 23.2	33.6		8.8	4 4.1	4.8		9.8	9 37.6	33.1		8.3	16 12.5	21.3	
10	51 14.5	41.1		10	23.8	29.0		9.5	16.8	6.0		9.3	42.7	12.0		8.7	25.6	32.6	A
9.5	23.4	13.7		9.8	24.8	21.4		9.8	17.9	21.0		8.9	45.2	7.6		10	26.6	48.5	
9.8	34.7	48.6		9.3	27.3	8.2		8.0	25.6	48.6	A	8.0	45.6	2.4		10	31.9	40.3	
8.0	48.6	35.0	A	9.9	41.9	24.9		9.4	27.7	35.0		9.8	57.1	35.3		9.7	40.4	25.5	
9.0	49.3	52.5		8.9	42.1	23.8	A	9.5	32.7	13.3		10	10 2.3	41.5		10	43.9	0.0	
9.3	55.6	4.8	A	9.5	46.5	53.3		9.0	49.8	4.1		9.4	10.4	11.8		7.8	44.7	28.8	A
9.4	52 6.1	49.3		9.5	53.4	15.3		7.0	57.2	5.7	B	9.5	10.6	43.8		9.2	46.7	24.4	A
8.2	22.2	26.0	A	9.7	56.6	49.3		9.1	5 7.0	54.0	A	9.8	18.3	53.0		10	51.8	47.1	
10	24.7	13.8		9.7	56.9	36.0		9.0	7.9	51.7	A	9.8	30.6	13.2		10	54.3	51.4	
9.8	25.1	35.0		9.8	59 5.6	23.4		10	8.3	40.8		9.4	31.6	2.6		9.8	58.9	4.8	
9.9	37.4	12.2		9.7	9.8	10.9		10	20.4	24.0		9.2	32.9	49.4		10	17 1.8	56.0	
9.8	39.3	44.4		9.6	10.9	18.7		9.3	22.2	25.7		9.8	48.5	29.2		9.5	8.1	21.7	
8.7	49.2	28.5	A	9.4	11.7	8.0		10	24.8	0.0		8.5	50.0	6.1	B	9.1	18.7	26.7	A
10	58.2	28.8		9.8	30.6	36.1		9.1	25.6	8.4		8.8	52.0	31.0		7.5	24.9	8.0	
9.7	53 3.3	4.0		9.6	54.0	21.3		9.2	29.9	9.0		9.1	52.6	34.0		9.3	27.4	46.3	
9.3	6.9	37.5		9.8	59.2	1.9		9.5	30.0	16.6		9.7	11 2.5	5.3		10	45.3	47.6	
9.6	8.2	56.4		9.5	0 0.7	30.0	A	9.8	33.6	29.1		8.9	5.6	56.8		9.6	18 6.3	3.8	
9.8	10.9	50.3		10	5.3	53.8		9.2	34.0	26.1	A	9.6	6.1	51.9		9.8	6.9	36.8	
10	11.1	44.9		10	12.4	35.2		9.5	41.1	24.5		9.8	16.1	33.7		9.0	8.4	48.1	A
9.5	11.2	28.1		10	29.8	21.4		9.8	44.8	59.2		9.2	25.2	9.1		9.5	12.4	41.0	
9.4	28.6	22.3		9.2	34.8	23.6	A	9.5	49.3	58.3	A	9.2	31.8	22.3		9.8	36.5	48.3	
10	31.0	27.9		10	38.1	35.2		10	6 1.1	34.4		9.5	34.3	56.3		9.5	39.7	27.8	
9.5	31.5	56.5		9.6	40.2	9.3		9.7	5.3	4.0		10	36.3	5.6		9.3	42.4	39.7	
9.8	43.4	15.0		9.2	50.7	47.9		9.4	6.7	58.1		9.5	45.7	57.2		10	51.4	41.8	
10	56.9	35.7		9.9	1 21.3	56.8		9.7	10.0	11.1		9.7	45.9	12.1		10	56.8	59.2	
9.2	58.8	52.1		9.8	26.9	3.3		9.6	15.4	42.2		8.9	46.8	9.0		8.8	19 5.7	26.1	B
10	54 34.4	58.2		9.6	31.4	8.7		9.3	33.8	23.0		10	12 1.1	25.7		9.5	10.5	27.4	
8.8	44.6	11.7		9.0	39.6	20.0	A	9.1	38.0	0.3		9.6	6.8	48.0		10	32.2	25.3	
9.2	55 8.6	43.0		9.3	40.3	38.4		9.8	39.7	5.8		9.8	11.2	49.1		8.2	34.0	51.0	B
9.1	11.4	55.7	A	9.2	43.4	33.4		9.8	47.9	24.8		9.4	13.0	30.5		8.0	41.0	49.8	B
9.8	22.9	37.1		8.7	59.5	20.1	A	9.5	54.7	18.1		10	24.1	46.2		9.1	46.6	3.4	A
7.7	31.8	26.2	A	9.3	2 0.9	48.4		9.4	7 1.2	54.2		8.8	33.0	46.6		8.5	55.8	32.5	A
9.8	32.7	42.5		9.5	4.7	8.5		9.3	1.4	21.0		8.8	41.6	49.6		9.7	20 9.9	50.8	
8.8	32.8	9.2		9.0	7.8	26.3	B	8.3	4.6	30.7	A	9.6	45.0	16.7		9.2	11.6	52.9	
9.1	34.9	7.9		8.7	8.3	46.3		8.8	17.8	16.8		8.6	46.6	34.6		9.0	14.6	1.8	A
8.8	36.7	29.6	A	9.5	10.0	27.0		9.4	22.9	40.2		6.9	49.9	15.2	B	9.4	30.4	12.8	
9.3	52.5	21.5		9.0	11.0	23.6	B	9.5	24.4	52.3		10	56.0	47.4		9.6	37.0	18.2	
10	54.3	4.5		9.4	23.8	15.4		9.8	27.0	55.4		9.3	57.3	53.4		9.8	37.2	1.9	
9.5	56 4.5	0.7		9.3	24.7	2.5		9.8	28.1	8.3		9.3	13 16.4	48.3		6.0	39.8	34.2	A
9.5	6.4	10.7		7.8	28.8	56.7		10	31.7	48.0		9.1	19.2	16.5		8.7	54.0	15.3	A
9.0	11.6	34.4		9.8	39.5	12.5		9.7	38.5	43.2		9.5	35.6	11.0		10	55.3	30.2	
7.8	15.0	22.1	A	9.4	51.0	23.7	A	9.5	41.1	22.2		8.5	51.8	35.8	A	9.4	58.1	19.3	
9.8	17.2	17.3		10	58.2	34.8		9.0	44.6	43.4		9.1	14 8.6	3.4		9.6	21 0.9	11.6	
9.8	21.0	22.3		9.8	59.3	53.6		9.5	48.4	48.8		10	29.7	23.5		9.8	14.5	46.0	
10	24.4	13.4		9.6	3 1.4	21.5		10	8 8.1	8.5		9.8	33.5	25.8		9.5	23.7	57.0	
10	25.2	17.6		9.8	7.2	34.8		10	20.1	44.1		9.7	52.8	28.9		9.8	26.4	13.9	
9.2	36.1	23.9	A	9.2	12.1	31.7	A	9.8	24.2	45.7		10	15 1.6	36.3		9.8	33.2	58.7	
9.7	39.1	2.5		9.0	25.1	27.7	A	9.6	26.9	8.5		9.1	9.6	53.1	B	9.2	22 0.3	1.5	
10	57 0.3	32.9		9.5	26.0	0.0		9.8	27.4	53.9		9.4	19.4	35.0		9.8	15.1	44.1	
9.5	9.8	49.9		9.0	31.3	39.1	A	10	29.8	32.0		9.9	20.0	25.6		9.8	22.6	53.9	
9.2	21.9	16.0	A	9.8	31.6	1.0		10	38.1	39.6		10	23.1	6.6		9.8	37.4	12.8	
9.8	25.9	40.3		9.5	32.7	13.0		10	42.2	13.4		9.7	33.9	46.3	A	9.1	39.9	13.0	A
9.5	30.2	7.3		9.8	39.3	29.7		9.8	9 12.8	52.5		9.8	36.9	3.9		9.7	44.8	12.0	
9.6	30.6	44.6		9.0	44.6	59.3		9.8	13.4	9.2		8.5	38.8	32.8		9.5	45.5	51.5	
9.1	39.4	13.6	B	9.5	45.4	47.9		9.5	13.9	22.1		9.3	40.8	30.4		7.5	50.3	2.7	A
9.8	40.4	11.6		9.7	51.4	20.5		9.8	25.8	39.0		8.2	53.1	32.3		9.4	23 3.0	18.8	
9.3	42.3	9.4		9.7	52.6	32.2		8.6	31.8	39.1		10	55.5	45.2		8.7	5.9	17.0	A
9.3	52.4	23.1		9.0	52.8	56.0		9.1	34.1	30.3		9.4	16 11.0	18.1		9.0	12.3	12.2	A
8.3	58 3.4	11.8	A	9.7	52.8	1.4		9.8	37.6	46.6		9.5	11.4	25.7		8.7	25.5	14.1	A

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	7h	−17°			7h	−17°			7h	−17°			7h	−17°			7h	−17°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	23 26.8	52.0		9.8	30 27.8	11.1		9.4	37 17.8	39.8		9.4	44 17.2	13.4		9.4	50 17.0	26.1	
9.8	26.9	50.9		9.3	31 4.0	42.1		9.5	21.2	46.9		9.5	21.0	24.8		9.4	21.5	3.8	
10	26.9	6.0		8.8	16.9	6.0	A	9.5	35.5	59.6		9.4	25.6	9.0		9.6	30.0	42.1	
8.6	28.9	41.8		9.8	24.8	45.3		9.8	37.1	41.5		10	31.9	29.5		9.3	31.8	49.6	
9.0	54.9	4.5	A	9.8	28.1	48.8		9.5	44.2	38.5		6.5	36.8	52.5	A	9.3	36.5	1.4	
8.6	24 3.0	1.1	A	9.7	28.3	59.2		8.2	46.0	31.1	A	9.1	59.6	17.3		9.1	45.9	11.0	
9.0	6.7	32.8		9.8	34.4	14.2		10	50.3	50.9		9.5	45 14.2	47.4		8.8	54.8	34.5	
9.6	7.6	27.2		8.9	40.3	1.4	A	9.2	56.0	48.6		7.9	17.0	59.2	A	9.8	59.2	24.4	
9.2	9.3	36.8		9.5	41.9	0.1		9.5	38 11.5	34.5		8.7	18.6	55.1	A	8.9	51 11.4	36.5	
9.0	24.1	57.3		9.6	53.3	48.7		7.8	13.3	20.9	A	9.0	19.3	0.9		10	27.9	35.8	
9.5	33.3	58.1		9.4	58.4	48.1		9.8	19.4	55.7		9.4	24.7	16.0		9.9	33.2	25.7	
9.3	36.8	5.1		9.3	59.5	13.5		9.5	28.2	0.3		9.5	28.4	22.8		8.8	36.8	21.9	
9.0	38.8	24.0		9.4	32 0.6	44.6		8.8	30.3	22.9	A	9.7	29.5	24.0		9.3	37.1	47.7	
9.0	39.9	42.2		9.5	27.7	45.1		9.6	39.8	21.5		9.8	31.1	32.9		10	37.8	4.1	
8.9	48.1	22.5		9.5	30.9	16.4		9.5	43.9	53.1		9.5	37.9	37.8		10	45.5	42.8	
9.1	25 1.0	35.8		9.8	34.5	39.5		10	45.2	16.9		8.5	39.5	24.6	B	9.5	49.7	30.0	
9.2	14.0	40.1		9.0	45.4	47.7	A	8.7	48.3	40.9		9.8	44.7	23.8		8.6	56.8	47.8	
9.5	22.1	56.3		9.0	54.5	54.5		8.9	49.4	52.6		8.3	53.7	38.9	B	9.8	52 20.6	24.0	
9.9	39.7	51.6		9.9	33 2.1	58.1		9.4	39 4.0	48.0		9.1	55.4	29.9		10	26.9	45.8	
9.5	42.6	21.1		9.3	7.5	35.8		9.8	12.5	59.8		9.8	46 6.8	58.8		9.3	28.2	36.7	
9.0	55.4	12.1	A	7.6	9.2	32.1	A	9.1	22.3	32.1		9.5	8.4	44.9		9.3	37.8	48.9	
9.2	56.8	32.9		9.9	17.6	34.2		9.4	25.4	47.4		9.9	10.9	20.9		9.2	47.9	56.4	
7.3	57.3	56.4	B	9.1	19.7	34.6	A	10	34.5	33.9		9.3	18.6	2.8		9.5	53.5	13.1	
9.8	26 3.2	3.4		10	20.3	59.2		9.1	35.2	15.9	A	10	18.9	20.0		9.8	59.4	43.1	
9.0	20.3	56.0		9.6	21.5	25.3		9.8	36.1	44.0		9.0	25.0	8.1	A	9.2	53 0.7	38.8	
9.5	24.1	59.0		10	25.0	2.9		9.2	36.3	19.7	A	9.8	25.2	2.8		9.8	4.3	30.3	
9.9	34.3	38.8		9.8	29.7	18.6		9.5	38.9	56.3		10	26.4	24.3		9.2	6.9	6.7	
9.8	39.3	52.3		9.9	31.2	7.8		10	42.5	33.7		9.5	28.3	51.2		9.3	10.6	55.0	
9.0	42.2	30.7	A	9.0	34.3	7.9		9.2	44.0	29.1	A	9.7	31.9	0.1		9.3	20.3	39.9	
9.4	43.0	20.0		9.7	36.4	51.1		9.8	50.0	24.4		9.8	42.1	35.8		10	26.3	31.7	
9.5	46.9	44.1		9.4	57.7	32.2	A	10	40 6.7	46.0		10	49.9	48.6		9.2	38.7	37.3	
9.8	27 4.1	26.9		9.3	58.3	37.8	A	9.5	9.1	53.4		9.6	57.2	17.5		8.8	39.0	46.6	
9.0	13.7	42.4		9.8	34 1.9	3.6		9.8	19.2	13.9		10	57.8	36.1		8.8	40.6	26.7	
9.4	15.7	32.5		9.4	12.1	25.6		9.4	33.9	57.0		10	47 1.9	44.8		8.0	48.4	36.4	
9.6	26.4	14.6		10	22.8	51.2		9.7	40.4	1.0		9.8	24.6	40.1		10	52.5	19.4	
9.8	31.9	6.3		10	34.3	28.1		9.8	44.3	20.4		9.2	28.3	30.7		8.0	58.0	32.2	
9.0	33.6	30.2	A	9.8	38.7	30.8		9.4	45.8	48.6		9.4	33.3	57.5		9.0	54 1.4	14.0	
10	41.3	24.2		9.0	41.1	47.4	A	9.1	54.4	7.5	A	9.2	37.6	10.2		9.1	9.0	16.0	
10	43.8	31.8		9.5	35 2.2	8.9		9.3	41 3.6	43.5		7.0	38.0	57.2	A	10	19.7	51.4	
9.5	28 1.6	45.8		9.8	3.4	35.3		8.9	10.6	39.0		8.2	39.4	45.4	B	9.9	20.9	41.4	
9.7	3.8	40.9		9.5	6.5	5.6		9.8	22.7	8.6		9.1	51.0	25.8	A	9.1	31.6	53.7	
9.8	14.2	22.3		9.3	8.3	45.1		9.4	22.7	29.7		9.0	52.0	25.4	A	10	35.5	5.4	
9.0	29.3	10.9	B	10	13.1	6.7		9.7	26.5	39.5		8.9	57.1	15.9	A	9.9	36.1	36.0	
9.5	30.1	26.8		9.5	20.0	58.0		9.5	31.3	56.4		10	48 5.8	10.8		10	37.3	37.6	
9.2	32.0	55.0		neb	27.9	52.1		9.0	55.5	7.5	A	8.7	9.2	52.5	A	10	51.6	50.7	
9.3	33.9	11.9		8.7	38.8	52.0	B	9.4	42 1.1	3.6		9.5	15.4	6.9		9.5	55 0.4	47.1	
9.5	40.2	6.9		9.8	48.2	40.0		9.2	2.2	44.0		9.6	17.4	14.3		9.6	3.4	49.5	
7.7	42.9	14.3	B	8.8	52.8	55.6		9.8	7.4	16.1		9.6	19.0	14.2		10	3.5	26.8	
10	47.1	59.0		9.8	36 2.4	54.7		9.1	9.0	20.9		8.7	25.2	41.3	B	9.8	3.5	31.6	
8.9	48.7	5.0	A	9.6	16.2	3.7	A	9.8	12.6	36.4		9.4	25.2	51.2		9.8	8.7	14.4	
9.5	51.1	27.7		9.3	17.2	8.4		8.1	14.7	2.8	A	10	40.0	43.8		10	27.2	38.1	
9.3	52.6	58.1		9.5	18.2	20.0		9.0	16.2	39.7		9.8	40.7	50.0		8.7	27.4	11.8	A
8.5	53.0	35.9	A	9.0	21.5	21.2		9.0	24.9	44.1		9.3	46.4	45.6		9.8	56 1.3	39.7	
10	29 5.1	59.3		9.6	34.2	8.4		9.5	43.5	34.8		9.8	49 12.4	7.6		9.4	2.2	40.8	
9.4	12.0	45.2		9.3	47.4	54.3		9.8	52.8	13.7		9.6	16.5	51.5		8.7	8.4	16.1	A
9.2	33.2	30.5		9.4	49.6	50.7		9.6	55.0	7.0		9.3	33.0	14.6		9.3	16.0	43.8	
9.0	37.7	36.4		9.5	54.5	57.2		9.3	43 26.7	8.0		9.2	43.5	12.1	A	9.8	16.4	36.2	
8.5	45.1	29.5		8.2	37 7.3	13.3	A	9.1	27.5	0.8		9.6	52.1	44.9		9.1	37.5	32.5	
9.1	56.7	7.5	A	9.5	9.1	6.8		8.7	33.2	41.1	A	9.1	57.0	17.5	A	9.3	48.5	2.8	A
10	30 18.9	50.6		8.6	16.7	35.7		9.4	51.9	22.5		9.8	50 7.9	9.6		9.2	49.6	26.0	

2301—2360					2361—2420					2421—2480					2481—2540					2541—2600				
	7h—8h		−17°			8h		−17°			8h		−17°			8h		−17°			8h		−17°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.5	56	54.4	50.4		9.3	3	7.5	11.3		10	10	7.7	18.8		9.5	18	24.7	22.2		8.8	26	1.7	8.3	
9.5	57	5.0	55.9		9.1		8.4	57.5	A	9.9		16.2	2.7		9.2		33.2	26.9		9.4		9.7	25.0	
10		9.9	48.0		9.0		9.1	17.5	A	9.3		19.1	24.9		10		36.0	38.7		10		30.8	29.8	
8.8		17.3	9.5	A	9.3		16.3	52.9		9.6		28.4	31.0		9.4		48.6	25.5		9.8		35.0	1.5	
9.1		18.5	38.8		10		20.8	5.7		9.3		41.0	51.8		9.3		55.7	11.4		9.1		38.6	57.0	
9.9		26.8	43.6		9.7		23.0	39.2		9.3		41.5	50.6		9.8		56.9	38.5		9.9		47.3	3.2	
9.2		39.9	18.4		8.7		25.9	53.3	A	9.5		58.2	19.0		10	19	11.3	57.0		10		48.4	34.4	
9.2		41.7	31.8		9.1		27.0	56.7		10	11	9.6	42.5		9.2		13.8	59.5		10		53.6	30.6	
9.4		45.8	39.5		10		27.2	41.1		8.8		28.3	59.7	A	9.5		19.0	15.0		9.0		56.8	17.0	
9.9		49.3	11.7		9.2		30.1	8.8		9.7		34.5	47.9		9.9		29.2	1.9		9.5	27	2.1	0.5	
6.8		59.9	15.3	B	8.7		40.8	29.7		9.4		42.1	15.0		8.8		33.4	40.9	B	10		10.7	2.4	
9.8	58	8.1	29.1		8.2		49.1	45.8	A	9.2		47.2	24.6		9.9		35.1	43.6		9.0		14.8	14.7	
9.1		9.2	21.7		9.1		54.2	13.2	A	9.5		51.3	58.9		8.2		42.4	35.7	B	9.1		18.9	56.7	A
9.7		19.4	18.6		9.5	4	1.7	39.6		10	12	2.2	26.3		9.7		45.8	22.6		9.9		20.5	37.4	
9.8		24.3	9.6		9.8		6.5	26.6		10		7.3	22.2		9.7		54.4	41.7		9.2		21.0	24.2	
9.5		26.2	0.8		9.4		14.3	18.0		10		17.4	26.9		9.3	20	4.6	1.6		10		32.1	1.2	
9.1		27.3	22.8	A	9.0		16.2	49.7	A	9.0		23.9	32.9		7.3		14.1	41.8	B	9.7		37.1	45.3	
9.2		31.5	55.6		8.0		30.8	56.3	A	9.3		28.2	23.9		9.2		15.9	50.2		10		38.2	13.5	
9.7		37.3	49.3		9.8		34.8	26.1		9.1		31.3	46.9	A	9.8		17.2	22.3		9.9		39.5	30.4	
9.5		46.2	36.8		9.6		37.8	46.6		9.3		47.2	11.7		8.7		25.4	41.2	A	9.9		40.6	20.9	
8.7		47.4	34.2	A	9.9		51.6	44.7		9.4		54.0	43.4		10		41.9	35.1		9.0		44.3	13.5	
9.0		49.4	56.6		9.7		53.0	2.8		9.1	13	10.3	48.9	A	10		56.5	37.7		9.5		54.7	6.5	
10	59	0.5	6.7		9.1		57.9	47.5	A	9.8		10.6	45.0		9.5	21	2.7	21.3		9.4		57.7	11.7	
9.0		10.9	42.0	A	9.8	5	9.6	7.0		9.0		17.5	40.0	A	9.4		13.6	19.8		9.4	28	4.4	52.2	
9.8		20.0	9.4	A	9.0		18.1	8.6	A	9.8		20.5	54.1		9.3		19.7	53.0		9.4		4.6	53.8	
8.5		21.9	54.1	A	9.8		30.7	36.1		9.9		25.2	27.9		9.9		29.5	2.6		9.4		5.8	17.2	
9.2		22.7	50.2	B	9.9		37.5	0.4		9.5		29.9	45.5		8.4		32.3	12.7		9.1		11.0	11.5	
9.8		26.4	6.9		9.6		43.5	20.5		9.3		36.4	55.8		9.6		32.9	57.2		9.5		45.6	52.1	
9.4		28.1	31.7		9.9		53.1	56.8		9.4		39.1	17.8		8.6		35.4	4.5		10		47.0	12.5	
9.4		34.5	55.0		9.5		56.5	2.2		9.4		39.7	19.4		8.9		36.7	33.2	A	9.4		50.5	58.2	
7.8		47.1	57.8	A	9.8		56.5	30.6		10		53.9	45.0		10		50.2	28.4		9.4		53.3	12.1	
9.7	0	5.7	49.7		9.0	6	13.5	48.4	B	10		59.0	52.1		9.0	22	6.5	2.9	A	9.2	29	3.6	51.7	
9.0		13.5	25.4		10		18.4	58.7		9.2	14	0.2	23.1	B	10		13.9	42.4		9.1		16.4	18.4	
9.3		16.5	39.0		9.4		43.0	40.9		10		2.8	1.9		9.5		15.1	23.4		10		47.2	11.8	
10		29.3	36.1		7.8		48.0	41.9	A	9.1		8.8	32.2	A	8.5		17.6	28.8	A	9.1		54.6	42.1	
9.3		45.9	53.9		9.4		55.1	23.5		9.5		9.2	23.3		9.2		35.8	19.0	A	8.4		55.8	31.5	A
8.7		46.2	36.4	A	9.2	7	5.4	14.0		10		11.1	51.7		10		50.2	0.6		9.5	30	6.4	22.7	
9.5		53.1	5.0		9.8		19.9	51.1		9.8		11.4	8.6		8.7		50.7	15.5	A	10		17.7	28.8	
9.3		55.6	27.7		8.3		23.4	13.8	A	9.4		31.0	39.0		9.4	23	7.3	7.8		10		17.9	36.4	
9.1	1	4.2	10.7	A	9.0		24.1	43.2	A	9.4		39.6	17.8		9.0		9.6	48.0		8.7		19.4	22.3	A
9.4		13.5	26.9		9.4		38.4	4.9		8.8		43.5	17.1	A	9.5		17.3	36.2		9.1		31.6	6.7	
9.1		16.6	5.9		9.8		54.2	13.7		9.0	15	3.9	53.8		8.0		32.4	51.6		9.3		48.8	50.3	
9.8		20.1	30.6		9.5		57.5	53.6		9.2		7.4	9.2		10		40.8	34.3		9.1		54.5	57.0	A
9.4		29.0	15.2		9.0		57.7	18.5	A	6.0		19.9	7.5	A	9.5		51.4	18.3		10	31	6.9	25.1	
9.7		33.2	12.1		9.2	8	4.6	27.4		9.3		26.6	45.5		9.1		51.9	51.0		10		7.1	10.7	
9.8		34.7	45.4		9.4		7.9	26.0		8.6		32.8	31.2		9.4		58.3	36.1		8.5		14.1	34.4	A
9.3		36.8	58.3		9.0		23.2	15.7	A	9.4		38.1	17.7		8.8	24	10.7	34.1		9.0		18.0	54.3	A
9.5		38.4	48.4		8.7		25.4	5.2	A	10	16	0.4	34.7		8.8		13.3	37.0		10		23.8	2.0	
9.0		39.6	22.1		9.2		27.1	42.2		9.5		6.4	50.6		9.8		14.8	48.5		9.5		28.7	5.7	
10		47.5	59.9		9.3		28.3	53.7		9.2		14.8	33.7		8.7		41.2	56.8	B	9.8		39.6	10.6	
10		58.6	29.8		9.4		45.9	53.4		9.4		27.4	10.5		9.8		57.8	35.4		9.4		49.5	46.8	
8.5	2	8.0	58.9		9.0	9	7.9	43.8		9.0		45.8	36.4		9.5	25	13.6	23.8		9.8		49.6	7.4	
10		8.9	20.7		10		8.1	10.8		10	17	0.2	18.9		9.2		22.1	51.9		8.5	32	3.2	55.8	A
9.8		9.6	30.6		9.2		26.8	59.9		10		1.5	26.5		7.0		24.7	53.8	A	10		16.9	39.8	
10		14.0	27.5		9.8		29.6	13.2		9.0		2.5	46.6		9.5		33.7	44.7		9.0		24.2	28.7	A
9.4		14.6	42.6		9.5		30.8	59.3		10		26.3	33.5		9.0		42.5	25.8		9.2		33.8	23.3	
9.8		23.0	15.8		8.5		33.3	24.8		8.6		36.5	42.1		9.6		46.1	44.6		7.0		52.8	45.7	L
9.9		24.3	20.3		9.0		40.7	14.3		10		49.8	34.0		9.5		54.3	48.4		9.4		57.0	56.2	
9.5		38.2	6.7		9.1		56.1	47.4		9.4	18	3.2	27.1		9.8		57.6	34.1		9.4		57.7	58.7	
9.8		56.1	28.7		9.8	10	3.8	4.9		9.2		11.3	59.5		9.5	26	1.3	45.4		9.8	33	5.9	36.2	

2601—2660				2661—2720				2721—2780				2781—2840				2841—2900			
	8h	−17°			8h	−17°			8h—9h	−17°			9h	−17°			9h	−17°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.7	33 10.0	56.0		8.9	43 4.5	40.9	A	9.5	55 33.8	41.4		9.5	5 3.9	34.9		9.3	16 17.1	20.8	
9.8	17.9	37.4		10	5.0	31.5		9.1	40.5	10.3		9.1	6.4	1.3		10	42.7	2.2	
9.2	19.4	11.8	A	9.0	5.6	36.3	A	9.6	56 15.7	49.4		9.8	23.7	14.8		8.7	17 1.8	8.3	
8.8	31.1	44.0		9.0	34.4	38.0	A	9.5	16.2	22.1		9.8	34.5	27.0		10	26.7	3.1	
9.2	38.8	20.0		8.7	39.5	20.6	A	9.8	23.5	44.1		9.8	6 1.3	44.8		10	28.3	24.4	
10	47.7	14.7		9.2	46.4	54.0		9.1	25.9	5.0	B	9.4	6.4	22.4		8.8	34.7	50.0	
9.0	58.9	47.7		8.9	44 7.9	50.4	A	9.0	26.4	5.4	B	9.8	6.6	3.2		8.0	18 7.6	28.0	
9.4	34 5.3	21.4		9.8	9.8	7.8		9.9	57 7.6	49.7		9.0	11.7	38.4	A	9.8	10.2	58.4	
9.0	8.1	38.2	A	9.4	19.5	43.0		10	8.7	39.8		9.4	30.6	7.5		9.6	12.8	47.5	
9.3	16.9	30.6		9.1	23.2	48.9	A	8.2	22.7	58.1	A	9.3	38.1	35.8	B	9.4	15.2	8.0	
9.4	18.7	43.6		10	34.3	14.8		9.3	28.0	16.5		9.8	45.3	19.9		9.6	19.3	14.9	
9.8	30.1	35.5		9.8	56.9	46.1		9.0	29.4	7.4	A	9.0	53.2	55.8		9.8	32.2	52.2	
9.8	55.5	58.3		9.5	45 7.3	54.8		9.9	35.9	7.6		10	7 33.1	55.4		9.1	55.6	29.1	
8.4	35 8.1	48.7	A	9.5	8.6	24.8		10	57.4	48.9		9.3	36.6	36.4		9.2	56.5	3.7	
9.5	29.8	21.2		9.2	9.1	4.0	A	10	58.6	51.0		10	8 0.1	58.0		7.0	19 10.1	19.1	
9.3	32.4	0.3		9.4	38.4	12.4		9.5	58 11.9	37.7		9.2	17.9	30.6	A	9.5	50.7	6.6	
9.8	52.3	54.1		8.9	50.6	48.2	A	10	19.8	35.3		9.7	23.8	24.9		8.7	58.2	58.4	
9.4	36 2.0	12.7		9.5	46 4.1	20.9		9.8	20.7	34.0		9.2	24.3	6.0		10	20 8.9	18.2	
9.8	2.6	46.7		8.8	14.0	49.7	A	9.8	33.7	40.7		8.8	29.3	21.8	A	9.0	15.2	33.8	
9.7	5.1	17.2		9.1	22.9	43.0		9.3	34.6	58.2		9.5	48.2	18.2		9.5	25.4	22.0	
9.3	8.3	0.7		9.0	30.9	18.6		9.4	44.6	18.1		9.0	52.8	51.9		10	33.0	26.9	
9.5	28.5	10.3		9.8	33.6	48.7		8.9	59 0.7	12.9	A	9.8	9 27.6	40.1		8.8	21 1.9	24.4	
9.0	40.2	24.1		10	47 12.1	40.2		8.5	16.4	57.3		9.3	35.7	41.4	A	10	4.3	12.1	
9.5	53.9	7.8		9.4	31.2	40.3		9.5	29.7	5.6		8.8	59.8	3.8		9.8	17.3	42.2	
9.4	54.8	4.7		9.8	34.4	15.6		9.0	33.3	10.7	A	9.3	10 4.8	29.3		9.6	20.3	46.7	
9.3	59.4	8.0	A	9.3	35.0	24.5		10	40.4	12.7		9.6	24.5	41.5		9.8	25.6	7.0	
9.8	37 3.3	53.0		9.0	42.2	8.8		9.8	43.4	14.6		10	40.0	58.4		10	37.4	1.8	
9.4	3.9	26.5		9.1	46.1	26.3		9.3	52.5	7.4		9.1	48.5	40.3	A	8.3	22 0.3	44.9	
9.3	5.4	31.4		9.5	48 8.7	53.4		9.9	59.9	40.9		9.7	55.6	30.7		8.8	8.8	22.6	
9.8	23.2	25.5		9.3	19.1	29.5		9.4	0 3.3	42.5		9.4	57.4	29.7		8.7	19.7	9.8	
9.2	30.5	9.8	A	5.6	32.9	41.2	A	7.2	12.8	37.3	A	10	11 13.7	40.9		9.4	24.3	43.0	
8.5	46.1	29.4	A	7.5	36.0	42.2	A	9.0	18.4	16.7	A	10	14.7	47.9		9.1	26.5	0.7	
9.8	47.0	47.9		9.3	39.3	37.1		9.8	55.7	12.2		9.1	15.9	43.3	A	8.7	29.2	11.9	
10	38 8.5	21.1		9.7	56.8	12.5		10	1 10.6	44.7		7.8	26.0	38.4	A	9.8	54.9	39.4	
10	8.8	39.0		9.4	49 58.2	24.5		9.0	23.5	30.3	A	9.8	55.4	6.8		8.7	57.8	57.5	
10	8.8	54.5		8.4	50 10.3	28.5		9.8	24.4	15.2		9.2	56.3	35.9	A	10	23 16.5	29.3	
9.4	10.7	0.8		9.3	18.0	1.2		8.6	25.0	16.8	A	9.5	12 32.1	6.9		9.4	17.6	54.5	
10	15.4	9.5		9.8	41.7	0.7		9.4	29.5	43.3		9.7	33.1	45.2		9.8	28.7	38.2	
10	17.7	21.4		9.3	43.4	38.5		9.4	39.4	15.7	A	9.3	40.5	6.6		9.8	39.6	55.1	
9.4	23.9	35.1		8.3	46.1	29.0		9.3	54.9	38.1		9.3	49.5	28.1	A	10	52.9	15.0	
8.5	39 2.6	18.0	L	9.3	49.3	57.0		9.5	55.5	29.4		9.1	13 11.9	34.5	A	10	24 14.2	44.7	
9.6	3.0	38.5		9.4	49.8	27.2		9.7	2 10.3	35.6		9.3	14.2	28.7		9.4	18.4	25.7	
9.4	6.6	16.1		9.3	51 2.3	33.7		8.7	19.3	37.9	A	8.5	21.4	56.0	A	10	34.7	17.1	
9.4	14.8	58.1		9.4	10.4	57.7		9.0	20.5	6.7		10	30.1	19.5		9.5	37.0	8.8	
9.5	47.0	50.6		10	31.3	2.7		6.2	23.1	44.6	B	10	32.8	2.2		8.2	40.2	46.9	
9.3	40 1.9	5.4		8.7	52 22.7	12.0	A	9.8	25.6	27.3		8.7	59.4	37.4	A	9.1	25 0.5	34.2	
9.0	5.2	25.4		9.5	55.1	9.2	A	9.5	45.2	35.7		10	14 21.9	55.9		9.8	6.4	4.7	
9.2	9.8	25.8		9.3	53 10.5	50.4		9.4	45.8	27.0		9.0	44.3	7.6	A	9.1	11.8	24.6	
9.5	17.8	27.9		9.5	31.4	30.3		9.8	3 27.3	13.4		8.5	47.4	8.5	A	9.8	28.5	51.5	
9.8	51.9	43.8		9.7	42.0	3.8		9.5	46.6	28.1		9.8	51.8	39.6		9.3	36.2	20.7	
9.3	41 3.9	12.6		8.9	49.4	39.9	A	10	51.3	44.2		9.8	15 9.9	53.2		9.5	36.5	52.3	
10	33.0	4.5		8.5	54 6.2	46.6	A	8.0	4 4.3	13.0		9.5	17.7	19.9		9.3	44.8	28.5	
9.4	33.6	32.2		10	24.3	25.8		9.0	28.9	21.5		9.5	19.9	11.4		9.0	53.9	5.6	
9.4	43.0	16.8		9.7	46.8	26.0		10	31.7	37.7		9.4	39.8	38.5		9.9	26 7.8	44.1	
8.2	51.3	30.9	A	9.3	50.4	33.8		10	37.9	50.6		7.5	44.0	16.2	A	9.0	27.1	38.2	
9.4	54.2	28.7		9.4	55 3.6	10.4		9.6	38.3	12.8		9.1	47.6	24.1	A	9.8	27.9	30.5	
9.5	42 8.6	20.2		9.0	6.1	56.4	A	10	46.9	19.7		9.2	54.0	3.4		9.9	37.0	55.1	
9.5	12.4	52.9		10	8.6	40.8		9.8	57.0	0.3		9.8	57.8	34.0		9.0	27 36.6	20.9	
9.5	17.3	28.4		9.8	24.2	20.6		9.5	59.7	39.8		9.8	16 3.4	49.2		9.1	41.5	13.6	
8.5	32.7	27.3	A	9.3	26.0	53.2	A	9.4	5 1.8	55.0		9.3	15.8	54.7		9.3	28 6.8	47.4	

2901—2960				2961—3020				3021—3080				3081—3140				3141—3200			
9h		−17°			9h		−17°		9h—10h		−17°		10h		−17°		10h		−17°	
m	s	′		m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
28	41.0	14.5		9.6	40	16.3	24.9	9.1	51	58.8	13.7	9.5	4	14.2	14.4	9.5	18	6.0	56.2	
29	15.0	40.3		9.3		19.4	25.8	9.2	52	0.8	47.3	8.8		15.6	16.8	A	10		13.5	1.7	
	27.8	29.4		9.4		22.2	23.6	9.5		5.6	46.8	9.0		24.0	34.5		9.5		45.7	15.5	
	29.1	59.6	A	9.8		49.4	16.4	9.7		25.3	15.0	9.1		27.2	51.7		9.3		47.7	37.1	
	37.0	42.2		9.6		49.5	20.9	9.6		31.5	15.7	9.2		46.3	48.1		8.3		48.3	41.9	A
	56.0	25.4		10		53.6	53.4	7.8		52.0	58.1	A	9.8	5	13.4	24.5		8.3	19	19.2	0.9	A
	57.0	40.0		10	41	10.6	24.0	9.9	53	7.1	58.1		9.4		15.8	13.3		8.9		31.2	2.7	A
30	19.1	22.7		8.3		15.7	42.3	A	9.4		10.7	0.4	9.3		17.4	53.9		9.8		41.7	22.7	
	34.9	7.9		9.0		17.4	57.0		9.8		20.5	56.6	9.1	6	24.3	48.2	A	9.5		53.6	27.0	
	35.5	47.3	B	9.0		19.5	10.1		8.5		28.2	8.4	A	9.8		25.9	54.8		7.3	20	7.9	30.9	B
	44.3	58.2		9.4		19.7	45.5		9.8		31.2	59.3		9.0		44.0	53.0	A	9.5		15.9	47.4	
	51.5	17.0		9.2		57.0	6.1		9.0		31.3	55.9		9.8		45.2	17.5		9.9		22.9	55.8	
	54.1	37.9		8.5	42	16.9	45.7	A	9.2		44.9	26.0		9.3		45.8	51.7		7.0		24.9	32.7	B
31	8.7	5.7		8.7		17.5	49.1	A	10		46.2	14.1		8.6	7	17.2	10.8	A	9.8		28.9	49.1	
	9.3	55.5		8.7		38.6	38.8	A	9.4	54	12.6	48.1		9.1		19.7	18.8	A	10		34.3	53.0	
	16.8	58.4	A	9.3		52.5	34.5		9.6		36.4	2.7		9.5		26.4	27.0		9.8		44.6	53.2	
	31.9	40.0		9.2	43	45.9	41.1		8.7		38.4	50.6	B	9.3		42.6	15.7		9.8		46.0	7.2	
	39.6	41.7		10		52.9	34.0		8.0	55	6.1	17.3	A	10		50.8	59.9		9.7	21	0.5	45.5	
	41.1	48.0		9.8		58.6	58.1		9.3	56	0.6	11.9	A	8.9		51.3	23.7	A	10		2.3	47.4	
	45.1	2.1		7.2	44	18.4	58.8	A	9.3		5.7	19.2		8.9	8	46.2	42.2		8.8	22	13.5	50.4	
32	9.7	31.8	A	9.1		35.1	57.9		9.8		19.4	37.0		9.5		46.3	48.3		8.3		34.3	30.1	
	32.8	39.8	A	9.8		38.4	51.6		8.6		19.6	47.7	B	9.1	9	3.5	57.0		9.8		54.0	6.6	
	52.3	41.9		9.4	45	8.8	28.4		9.3		57.9	44.0		8.8		12.4	59.4	B	10		57.4	44.4	
	55.6	25.0	A	9.9		13.8	38.5		9.8		58.2	42.2		9.5		41.5	8.7		9.0	23	18.0	7.0	A
33	9.4	38.1		9.0		21.7	2.9		9.0	57	3.0	47.5		9.2		44.3	56.8		10		43.7	52.9	
	16.5	18.4		9.5		23.0	12.5		8.0		6.4	23.8	A	8.2		47.3	35.1	B	9.0	24	14.6	40.5	
	16.8	48.0		9.4		28.2	42.8		6.8		7.4	23.8	A	9.1	10	1.8	1.0		10		22.8	42.4	
	33.8	46.3		9.1		34.6	21.4		9.4		20.8	45.8		9.4		7.3	55.5		9.3		34.3	47.9	
	49.2	51.7	A	10		37.8	24.1		9.5		25.9	49.8		9.3		20.5	5.4		9.3		41.1	19.0	
	49.7	49.6	A	9.4		43.9	14.3		9.1		27.0	53.8		9.0		20.7	0.1		9.0		58.7	34.4	A
34	18.3	13.5		9.0		49.2	25.0		9.9		30.0	13.0		9.7		29.6	42.5		9.1	25	0.9	7.1	A
	26.8	46.9		8.8		53.8	39.5	A	9.3		30.2	35.4		8.9		39.9	44.6	A	9.4		26.9	0.9	
	42.4	49.6	A	8.5		59.4	35.2	A	9.7		31.7	32.2		9.5	11	23.8	54.5		10		34.5	13.6	
	45.6	13.9	A	7.8	46	30.9	14.5		9.8		32.9	27.3		10		24.2	50.7		9.4		50.6	51.6	
	53.5	25.7		9.5		48.3	50.3		7.9		40.2	14.1	B	9.6		51.9	48.9		8.8	26	13.4	32.0	A
35	0.0	8.3	A	9.4	47	15.9	1.0		9.6		40.4	15.4		8.3		59.6	22.8		9.8		43.5	23.0	
	8.1	59.7		8.0		16.8	34.8	A	9.2		53.3	30.6	A	9.6	12	2.5	19.6		8.2		50.7	5.0	A
	11.3	16.1		9.5		20.8	41.0		10	58	18.4	53.8		9.5		6.1	53.1		9.5		51.2	43.8	
	19.1	1.8		9.8		30.4	5.5		9.4		28.5	14.0		9.4		7.0	38.2		8.8		55.1	3.2	A
	42.7	48.8		9.5		56.2	59.8		9.5		49.7	29.7		9.5		22.4	5.8		9.5	27	15.5	1.8	
	51.3	0.5		9.3		57.3	9.1		9.8	59	26.6	28.4		9.5		28.0	8.9		10		36.8	17.5	
	54.5	4.3		10	48	3.1	23.8		9.4		39.1	25.0		9.3		55.1	20.6		8.8		46.5	34.5	A
	58.6	59.7	A	9.1		3.7	26.4	A	9.3		52.6	25.5		9.1		56.4	6.5		10	28	2.5	34.6	
	58.8	27.6		9.8		24.2	57.5		9.2		59.5	17.0		9.2	13	11.4	28.4		9.2		14.0	35.9	
36	2.7	55.7		9.7		35.6	40.9		9.1	0	6.6	22.5		10		16.1	47.7		9.2		20.6	38.5	
	6.0	55.2		9.4		37.9	46.0		9.2		14.5	42.2		9.5		41.1	53.0		9.4		28.3	11.1	
	48.2	11.9		8.9		52.0	25.6	A	9.8	1	7.4	13.7		9.8		43.1	51.5		6.6		36.0	49.2	A
37	34.1	53.1		9.3		52.0	38.2		8.2		26.0	42.3		9.7		58.4	44.2		9.4	29	1.5	48.1	
	41.0	40.2		9.8	49	8.9	29.6		9.8		33.3	46.7		6.0	14	8.9	15.0	B	10		8.3	12.5	
	45.6	51.5		9.6		10.9	30.8		8.7		43.7	47.6		10		11.7	0.1		9.4		13.4	40.3	
	53.4	22.3		9.8		21.7	45.0		9.0	2	14.8	28.5		9.1		41.5	50.3		8.9		30.4	23.2	
38	0.3	2.2	A	9.7		26.2	44.6		7.2		19.5	25.6	B	9.2		48.8	51.4		8.8		41.1	38.1	
	7.5	0.8	A	9.1		43.1	31.7		9.7		41.1	34.1		7.2	15	0.4	18.3	A	9.5		53.5	54.7	
	13.5	28.8		9.1		59.1	33.2		9.1		46.6	33.2	A	10		15.6	55.1		9.4	30	5.1	39.2	
	45.1	44.4		9.0	50	5.5	58.5		9.4	3	32.1	35.4		9.7		35.1	33.8		9.3		12.4	55.5	
	50.1	44.2		9.4		10.4	12.9		9.2		35.7	56.8		9.5		41.3	41.8		10		33.0	57.1	
	50.6	16.4	A	9.4		18.3	13.4		9.7		38.7	57.4		9.2		43.7	45.5		8.5		34.7	4.2	A
39	4.1	39.8		9.3	51	25.9	21.5		7.5		39.2	53.2	B	9.1	16	11.5	48.8		9.3		51.4	44.9	
	48.3	23.8		9.1		27.4	22.1		9.8	4	11.3	17.5		10		48.7	8.7		10	31	16.0	59.6	
	57.4	29.0		9.8		54.1	31.8		10		12.5	31.2		neb	17	47.0	54.5	B	8.0		30.1	8.0	A

3201—3260				3261—3320				3321—3380				3381—3440				3441—3500			
10h		—17°		10h—11h		—17°		11h		—17°		11h		—17°		11h		—17°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.3	31	55.1	49.3	8.4	49	45.6	43.0	A	5.8	5	18.5	42.5	B	9.8	19	36.9	43.7		8.9	33	20.3	32.4	A
8.8		58.9	28.7	8.5		50.1	26.8		8.8		25.0	6.8		9.7		44.4	15.1		9.4	34	10.1	0.9	A
8.5	32	11.1	41.3	9.6	50	2.8	45.4		8.2		27.2	52.8	B	9.6		46.3	14.7		9.3		15.2	57.3	
10		22.6	5.7	8.4		14.7	30.7	A	9.0		33.3	0.0		9.1		52.9	22.3		9.1		16.2	38.0	A
10		48.4	59.7	8.4		24.7	31.6	A	9.5		55.0	37.6		8.8		56.9	28.1	M	9.5		53.2	13.2	
9.1		59.2	16.4	9.8		41.7	56.0		8.0	6	1.4	22.0	A	7.4	20	8.3	43.0	M	10		54.2	11.9	
10	33	4.6	51.2	10	51	2.0	26.7		9.3		25.0	18.2		9.4		11.5	36.6		9.2	35	17.7	20.8	
9.3		24.7	34.0	9.8		22.3	45.0		9.7		44.0	5.5		8.2		31.3	21.1	B	9.2		20.0	49.4	
9.0		28.5	51.5	9.8		23.1	29.6		9.6		54.6	53.1		8.3		59.1	50.9	M	8.7		24.9	38.9	A
9.8		38.5	48.8	9.2	52	6.1	2.8		9.4	7	4.1	40.1		9.5	21	3.3	14.5		9.0		40.2	17.2	A
9.0		41.9	58.7	10		27.8	22.0		9.7		12.9	0.5		8.7		6.9	34.7	M	9.5		42.1	2.5	
9.8	34	7.0	11.9	9.1		40.1	16.2		9.4		14.6	50.9		9.7		21.6	45.2		9.1		59.5	31.6	
9.7		19.7	41.6	4.0		41.6	31.4	B	9.5		24.6	7.3		10		37.7	19.1		8.0	36	14.7	17.5	A
9.7		48.3	31.7	9.4		52.7	49.9		9.8		41.1	34.9		9.1	22	20.8	29.4	A	9.1		28.7	39.7	
9.5	35	15.2	24.8	9.4	53	2.4	39.8		9.8	8	1.8	45.9		9.8		23.2	11.2		8.3		35.1	45.5	M
9.4		30.2	44.2	9.8		6.0	21.8		9.5		5.3	19.8		8.3		26.4	36.8	A	9.7		53.3	26.0	
8.5		32.6	46.5	9.3		15.2	2.8	A	9.1		7.1	19.8		9.7		34.2	16.5		9.3		56.2	34.3	
9.8		56.2	26.0	9.8		15.4	49.2		9.8		9.9	5.2		7.7		43.7	5.1	A	9.2	37	7.3	39.8	
9.2	36	25.0	14.5	8.9		21.1	32.5	A	9.7		26.0	46.0		9.2		45.8	41.6		9.8		24.6	53.8	
9.2		35.2	32.2	9.8		25.0	12.2		9.8		43.5	20.7		9.1		59.2	23.2	A	5.0		25.2	32.3	A
10		57.8	0.6	var		25.6	32.7	A	9.5	9	0.7	30.9		9.8	23	32.5	30.2		9.6		42.0	0.2	
10	38	46.0	20.5	8.7		36.0	35.4	A	9.3		14.1	5.0		9.7		38.0	0.9		9.6	38	2.5	50.4	
9.5		49.9	11.9	9.8	54	1.3	8.2		9.8		27.7	11.2		9.5	24	30.6	3.2		9.6		2.7	46.9	
9.8	39	24.7	35.1	9.8		59.1	51.0		9.2		33.4	38.2		9.0		36.4	26.2		9.8		21.3	3.8	
9.0		27.5	17.1	9.8	55	2.2	17.6		9.6	10	0.4	2.4		9.0		39.6	57.9		9.2		28.5	22.7	A
9.8		31.1	30.7	9.5		28.1	57.4		9.4		38.6	11.8		9.8		55.5	56.2		9.6		34.4	13.4	
9.0		48.9	41.9	9.6		35.2	19.5		9.3		59.0	10.8		9.4	25	15.2	32.4		9.8		55.0	25.4	
9.8	40	5.3	52.8	9.8		42.6	50.3		9.5	11	7.9	52.5		9.5		52.5	6.2		10	39	19.8	56.2	
9.8		6.0	25.5	9.1		52.8	32.2		9.5		16.5	10.1		9.0		52.5	54.9	A	9.0		23.2	3.5	A
9.0		12.0	23.2	9.8	56	1.2	8.4		9.3		33.5	6.4		9.5	26	3.1	25.3		9.8		56.7	54.9	
9.3		18.5	53.5	9.9		14.3	24.8		8.5		40.9	34.2	A	9.3		44.4	14.3		7.0	40	1.4	34.4	B
9.8		31.1	59.6	9.8		14.6	48.7		8.8		55.3	43.3	A	9.3		45.7	44.5		10		3.3	58.7	
9.5		33.3	13.2	9.5		49.1	14.7		8.5	12	36.4	6.8	A	9.1		45.8	58.5	A	9.4		15.7	45.7	
9.8		41.2	36.5	10		50.0	54.8		10		42.7	44.3		9.8	27	3.0	4.2		9.8		19.0	37.2	
9.8	41	11.5	28.9	9.4	57	10.5	52.5		9.5		46.1	31.5		9.3		4.6	13.9		9.4		43.8	8.7	
9.7		14.7	47.5	9.1		19.2	22.1		9.4	13	12.7	48.5		9.2		45.3	39.7	A	9.6		53.8	14.8	
10		20.1	59.9	9.5		56.6	15.6		9.8		19.2	46.4		9.0		54.6	47.9	A	10		59.8	46.8	
9.8		49.1	52.2	9.6	58	12.0	39.5		9.5		32.3	1.2		8.9	28	26.9	7.7	M	10	41	0.4	20.1	
9.0	42	5.3	45.1	A 9.1		29.0	52.4		9.0		41.4	55.9	A	9.2		41.3	54.0		10		1.3	41.9	
9.5		20.4	50.7	10		57.3	17.8		9.2		54.5	17.1		9.0	29	6.6	27.4		9.4		41.4	23.1	
9.5		43.1	38.4	9.1	59	9.7	58.6		9.6	14	40.3	0.3		9.2		25.9	20.6		8.9		43.9	42.3	
9.5		44.2	12.9	9.1		28.2	37.0		9.7		48.1	44.8		9.8	30	33.1	6.7		8.9	42	10.3	34.8	
9.6		59.2	0.9	9.0	0	3.6	35.4		9.1		54.2	1.8	A	9.8		45.8	57.2		9.3		17.8	33.5	
8.5	43	20.8	17.3	A 8.5		13.8	1.0	M	8.8	15	24.1	48.4	A	7.0		47.0	23.5	B	8.8		34.7	21.7	
7.0	44	0.4	33.7	A 9.5		32.5	21.0		8.9		27.5	25.1		9.4		52.9	43.8		8.8	43	19.2	55.8	
9.4		7.6	14.2	9.8		53.5	37.4		8.7		32.0	42.9	A	9.8	31	5.4	13.6		10	44	9.1	55.4	
9.0		29.7	14.3	8.6	1	16.4	19.8	A	5.3	16	9.1	58.8	A	9.5		7.5	54.7		8.2		15.6	59.0	
9.3		53.3	18.0	9.9		27.4	2.9		8.0		19.0	31.4		9.7		7.9	45.9		8.2		18.3	21.9	B
9.5	45	9.3	52.7	9.4		33.4	4.1	A	9.5		21.6	36.3		9.5		24.9	15.9		9.3		42.1	21.5	
10		18.1	59.0	9.7		45.7	40.6		9.6		43.1	35.4		9.4		27.5	38.9		8.7	45	7.7	31.9	B
9.4		20.7	18.2	9.5	2	15.4	11.8	A	9.8	17	44.0	28.5		9.8		37.8	8.1		9.8		18.6	2.6	
8.3		26.8	51.8	A 10		34.0	48.7		7.2	18	0.5	48.8	A	9.9	32	10.9	31.8		8.5		34.1	15.4	B
9.1		34.4	0.8	A 10		48.6	56.8		9.3		0.9	16.0		9.3		18.1	39.7		9.8		57.6	7.8	
9.8	47	31.0	0.7	9.1		52.6	38.7		9.8		25.6	59.1		9.2		19.0	18.2		9.2		58.5	57.8	A
9.8		59.3	57.8	9.0	3	15.0	41.6		9.8		35.9	15.7		9.8		37.7	58.7		10	46	2.4	45.3	
9.9	48	38.7	4.6	9.8		23.8	53.0		9.9		42.8	7.3		9.1		39.6	53.6	A	8.3		40.6	8.7	
9.5		46.8	30.2	9.7		53.9	48.0		9.5		45.0	23.8		9.6		45.9	3.6		9.6		54.6	57.1	
9.8	49	18.9	10.0	8.8	4	25.2	51.9	M	9.4		58.9	17.4		9.1	33	9.2	57.3	A	9.9		56.6	39.8	
8.3		30.6	53.7	A 9.5		31.3	51.9		8.3	19	3.4	18.0	M	8.3		9.8	22.1		10		57.8	55.7	
9.0		32.5	13.7	A 9.4		36.2	6.3		8.8		11.5	37.2		9.2		14.4	54.0		10	47	6.5	54.0	

3281: 10th

3501—3560				3561—3620				3621—3680				3681—3740				3741—3800			
	11h—12h	—17°			12h	—17°			12h	—17°			12h	—17°			12h—13h	—17°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	47 12.2	49.2		10	1 12.5	21.2		8.2	18 28.1	7.5	A	9.5	32 49.8	4.0		9.9	49 53.5	10.0	
9.6	21.0	13.5		7.2	18.2	37.4	A	10	51.9	20.9		9.0	33 1.7	13.1	A	8.9	50 27.8	22.2	A
9.4	31.6	46.1		9.4	45.4	55.2		9.9	59.4	18.0		9.4	34.6	52.3	A	9.6	58.3	23.7	
10	41.1	43.1		9.0	47.0	13.3		9.6	19 21.0	21.3		10	40.7	13.4		9.7	51 22.4	37.0	
8.7	51.5	18.1	A	9.6	59.6	2.9		9.8	24.6	54.0		10	34 8.2	44.3		9.8	43.2	29.2	
9.5	48 12.8	26.2		10	2 26.5	28.5		6.8	42.6	36.4	A	10	13.5	51.2		9.7	57.5	48.6	
9.4	17.5	16.0		9.6	44.1	29.7		9.1	20 2.6	48.4	A	9.4	32.6	12.9		9.6	52 0.5	30.3	
9.8	38.7	32.3		9.1	4 2.8	48.7		8.0	14.7	26.0	B	9.9	35.2	45.4		9.3	31.2	43.4	
9.7	56.1	44.8		8.3	23.2	58.7		7.3	25.1	48.4	A	9.1	35 20.8	6.1		9.0	33.0	46.5	A
8.8	49 3.0	18.0	A	9.5	25.4	17.8		9.3	36.4	28.0		9.5	33.7	38.2		9.4	53 8.7	59.2	
9.8	13.0	48.8		9.0	42.9	35.5		9.8	52.7	19.1		9.0	41.9	27.9		7.0	29.8	20.6	A
9.1	28.4	47.5		9.5	59.5	36.5		9.0	58.5	29.4		9.2	51.3	29.7		7.8	41.6	6.0	
9.5	28.5	19.2		9.3	5 7.1	49.8		10	21 0.6	3.0		9.5	55.7	38.4		9.1	54 8.1	6.0	A
8.9	44.8	34.6	A	9.5	10.0	31.0		10	9.8	11.2		7.5	36 16.4	29.3		9.8	43.9	48.5	
9.2	45.1	37.3		9.3	33.4	33.9		9.8	11.5	30.2		9.4	27.6	8.6		9.8	51.0	56.5	
9.6	50 16.0	48.2		9.4	48.4	50.8		8.5	22 38.7	8.5	A	8.2	53.5	42.1	A	9.8	55 3.3	5.1	
8.3	27.2	17.6	B	9.1	52.4	33.4		9.6	41.1	10.0		9.4	57.4	42.3		7.5	10.0	39.4	A
10	28.8	44.2		10	6 22.3	23.4		9.2	47.5	56.5	A	9.7	37 8.7	4.6		10	11.1	26.5	
9.8	39.8	32.8		10	34.2	57.3		9.9	23 0.0	57.4		9.3	21.6	38.6	A	9.6	28.1	0.3	
9.4	40.6	36.3		9.1	7 24.6	53.6		9.9	19.4	8.0		10	39.1	38.6		8.8	42.3	18.8	
9.7	55.4	4.4		9.5	34.3	35.2		9.1	51.4	0.2		9.5	38 18.1	20.1		9.5	49.5	33.7	
10	51 10.3	43.3		9.5	42.0	44.4		9.3	24 9.5	52.5		9.5	23.0	16.5		9.9	56 21.4	5.4	
9.5	42.3	52.0		9.0	57.2	49.3	B	10	50.2	0.2		9.5	43.2	45.2		9.9	31.5	43.2	
9.8	50.3	53.1		8.4	8 12.2	44.1	B	8.0	58.4	56.5	A	7.3	46.3	25.5	B	9.5	45.0	30.8	
9.8	52 21.7	57.9		9.3	28.5	29.7		9.0	25 3.7	32.7		9.7	39 21.6	48.9		9.7	47.1	32.3	
9.6	37.9	36.4		9.6	29.6	15.9		9.5	16.0	16.3		9.7	22.7	30.9		9.0	57 5.4	8.0	
8.9	41.8	11.8	A	10	50.8	11.5		8.8	19.5	41.3		9.8	30.8	21.9		9.7	45.3	46.8	
9.5	47.2	5.5		10	59.5	33.4		9.3	57.3	26.5		9.9	38.5	8.8		6.8	58 4.0	28.6	A
8.3	53 37.5	42.6		10	9 16.4	17.8		9.2	26 18.2	3.8		9.4	39.7	24.8		8.6	14.5	42.6	A
9.6	48.1	4.8		10	20.8	41.1		9.5	26.7	35.5		10	45.2	50.2		9.5	28.9	7.0	
10	48.7	57.6		9.9	43.9	12.1		7.0	35.3	23.2		10	40 5.0	10.6		8.9	32.8	45.6	A
9.1	53.4	34.5		8.7	59.4	27.4	A	9.1	49.3	56.0		10	21.8	50.5		9.7	59 0.6	57.3	
9.8	59.3	13.4		9.5	10 12.9	10.1		9.2	57.0	38.2		9.0	27.6	17.6		10	29.3	7.3	
9.4	54 0.3	20.7		9.9	18.5	52.7		9.5	27 7.3	21.2		9.5	53.0	32.7		7.8	0 7.6	13.4	B
9.8	11.7	43.1		10	20.0	38.1		9.3	20.3	21.8	A	8.5	42 50.7	47.7	A	8.9	46.7	8.1	
8.5	17.2	59.1		8.3	47.0	54.5	A	9.6	28.1	39.9		9.5	43 18.2	58.4		9.5	59.5	21.3	
9.4	36.1	0.8		9.4	11 22.6	43.9		9.3	29.3	56.5		9.1	21.7	52.1	A	10	1 21.4	52.8	
9.8	46.8	29.4		9.5	40.8	16.9		9.9	52.0	4.4		8.8	25.1	4.2		9.7	42.8	59.5	
9.9	55 2.2	57.4		9.5	12 48.7	19.8		9.3	28 8.8	23.6		9.5	45.6	55.0		9.4	49.1	56.9	
9.9	3.7	18.3		9.9	13 31.2	28.6		9.3	51.7	44.1	A	9.3	44 28.1	5.4		9.5	51.7	41.7	
9.2	12.4	36.6		10	40.1	25.2		9.3	29 9.2	23.1		9.1	29.0	0.5	A	10	2 16.1	4.8	
10	21.8	43.3		7.8	14 22.9	35.6	A	10	32.4	42.4		9.0	46.1	24.7		10	36.2	22.7	
9.5	26.6	58.5		9.9	25.3	1.0		9.8	30 10.2	46.1		8.2	45 33.3	42.3	B	9.0	36.9	43.6	A
9.7	56 8.1	7.2		9.8	27.0	7.6		9.8	25.3	14.5		9.4	51.5	28.2		9.1	54.6	8.0	
9.7	22.6	57.1		9.7	41.1	14.9		8.9	40.2	53.1		9.0	46 19.6	14.8	A	9.8	3 16.5	44.1	
8.5	57 19.4	2.3	A	9.2	41.7	4.3		9.3	31 0.3	44.8		7.0	21.6	14.9	A	9.0	57.0	4.2	A
9.3	21.0	45.2		9.5	57.3	59.0		8.8	3.6	44.5		9.3	23.7	6.2		9.5	4 4.3	52.2	
9.8	45.8	0.8		9.2	15 12.9	19.8	A	6.0	9.6	27.2	B	9.5	41.3	2.9		9.5	26.5	37.9	
9.6	58 24.4	56.4		9.8	18.4	47.9		8.9	23.4	21.6	B	9.2	59.3	4.2		9.8	43.3	50.9	
10	44.3	37.5		9.4	49.6	43.6		9.0	25.5	49.4		8.5	47 7.3	33.7	A	9.8	59.3	22.7	
10	46.3	42.0		10	59.9	31.3		9.3	27.2	46.5		9.6	15.0	58.7		10	5 0.2	8.4	
9.5	51.1	57.4		9.5	16 6.3	3.3	A	8.5	42.2	14.9	B	10	20.7	15.0		9.3	28.5	36.6	
8.5	59 20.5	10.2	A	9.6	20.6	44.5		9.1	51.1	26.0		9.2	33.5	45.5	A	9.5	29.7	41.5	
9.5	41.3	44.4		9.8	58.6	58.3		9.8	53.6	24.2		10	48 12.2	35.1		9.1	6 5.4	47.6	
9.1	48.3	6.1	A	8.3	17 2.0	26.5		9.7	32 1.3	39.3		10	22.9	45.0		9.1	9.3	53.9	
9.3	49.2	10.5		8.8	18.8	47.0		9.3	14.0	39.2		9.0	32.5	58.2		9.5	15.2	31.2	
6.9	0 1.1	23.0	A	8.3	21.0	26.4		9.6	16.1	21.4		8.9	33.4	27.5		9.3	17.3	15.6	
9.3	13.1	23.2		9.7	30.7	54.9		9.9	18.9	39.1		9.1	46.3	32.7		9.5	29.3	0.0	
7.8	54.0	46.2	A	8.9	18 6.5	21.4		8.5	19.8	23.2	B	9.0	49 13.4	48.4		9.7	55.4	12.9	
9.4	1 3.3	5.6		8.5	9.6	8.1	A	8.4	30.5	44.2		9.5	15.4	9.2		9.8	56.7	27.2	

3614: neb GC 2917 3723: 33:23 42′18″.4 B_4, Ep. 1873.28

3801—3860				3861—3920				3921—3980				3981—4040				4041—4100			
	13h	—17°			13h	—17°			13h	—17°			13h—14h	—17°			14h	—17°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	6 58.4	46.8		9.1	21 26.2	16.7		9.8	37 48.3	43.5		9.5	53 33.1	4.2		9.8	6 53.2	22.8	
9.8	7 46.7	13.9		7.0	39.4	58.6	A	9.0	48.5	1.0		8.5	56.7	11.2	A	9.2	54.3	31.3	
10	54.0	39.9		9.9	44.5	0.2		9.8	50.1	32.1		9.4	54 6.7	23.5		9.0	55.3	56.5	
9.6	8 24.9	47.6		10	45.5	31.0		9.1	38 12.5	49.3		9.0	34.2	1.7	A	9.6	59.1	49.9	
9.6	30.1	56.3		10	58.7	52.9		9.5	15.7	32.5		9.1	40.5	47.0		9.5	7 1.9	0.9	
9.8	9 2.5	35.7		9.6	22 20.3	42.8		8.5	26.1	16.6	A	9.4	55 0.7	20.9		6.0	25.4	31.4	A
9.2	12.1	49.4		9.3	24.9	31.8		9.4	42.8	28.0		9.0	21.2	1.3	A	9.2	29.6	26.5	
8.8	23.1	8.4		10	34.3	41.6		9.1	44.9	54.2		9.1	28.4	48.3		9.4	34.7	1.4	
9.8	29.5	12.6		9.1	43.5	1.6		8.9	39 3.5	20.3	A	9.1	40.1	44.4		8.8	8 4.3	44.8	A
9.5	57.0	28.5		9.3	50.0	9.8		8.5	9.8	5.7	A	9.2	56 7.8	9.9	A	10	6.5	52.2	
8.9	10 25.3	33.2	A	10	58.2	13.3		8.5	32.6	34.7		10	8.2	41.6		9.1	40.9	13.1	
9.5	40.7	17.8		8.1	23 12.7	46.1	A	6.0	32.7	7.6	A	10	29.7	20.0		9.8	52.4	35.7	
5.0	47.9	30.6	A	9.8	14.6	51.6		9.9	44.5	49.6		9.4	43.1	50.4		6.5	9 3.7	54.5	A
9.8	53.9	5.6		9.3	35.1	19.1		7.7	40 2.3	51.0	B	10	46.1	19.7		9.5	19.3	26.1	
9.3	54.5	28.2		9.8	36.5	59.8		9.4	10.2	27.4		9.5	47.0	25.4		9.1	20.3	0.8	
9.5	11 40.5	23.2		9.5	42.9	1.8		9.5	14.4	48.2		9.3	52.9	39.9		8.7	22.0	49.0	A
10	44.3	33.7		6.4	24 14.1	58.7	L	5.4	41 59.6	24.5	A	9.4	56.3	40.1		8.8	25.3	4.9	A
9.2	45.0	23.3		10	17.3	52.0		9.0	42 3.8	7.0		9.4	59.3	32.7		9.9	47.5	25.5	
9.2	47.8	45.9	A	9.7	46.3	41.1		9.8	16.0	19.4		10	57 10.7	54.3		9.4	56.5	26.2	
9.1	54.8	45.8	A	9.2	53.7	17.2		9.7	20.5	13.0		9.0	19.4	8.1	A	9.3	10 12.4	8.8	
9.4	12 6.4	28.2		8.7	58.3	0.7		9.7	41.3	1.0		9.5	24.3	12.5	A	8.8	18.0	3.9	A
9.4	11.7	11.5		10	25 8.3	51.8		9.1	43 24.4	7.6		8.6	41.8	22.5	A	9.2	31.3	0.6	A
8.5	36.0	24.6	A	8.5	40.7	45.8		10	32.1	19.5		9.0	42.7	23.1	A	9.3	42.2	58.5	
10	45.3	6.7		10	26 2.2	48.9		8.5	39.7	38.0	A	10	44.5	4.0		9.1	52.0	24.6	
9.5	48.7	9.6		9.6	3.6	34.8		9.5	54.2	35.3		9.3	46.2	36.7	A	7.8	11 25.7	51.1	A
8.3	50.9	39.8	A	9.7	8.9	22.5		9.5	44 13.2	54.1		10	58 9.9	29.1		9.9	30.4	31.0	
9.3	52.6	13.6		9.8	16.0	44.7		9.3	14.4	41.2		9.7	37.4	1.1		9.5	58.7	2.8	
9.5	13 4.7	37.3		9.1	25.9	23.7		9.5	33.0	24.6		8.7	51.8	8.6	B	10	12 30.1	44.1	
7.0	14 0.2	58.9	B	10	51.8	40.3		7.0	44.5	59.5	A	9.5	59 1.7	6.4		8.7	13 0.8	7.7	A
9.5	7.6	8.7		9.6	27 51.6	30.8		9.0	54.9	57.7	A	8.7	36.0	18.0	B	10	17.3	37.3	
9.0	17.6	10.0	A	9.5	28 13.1	58.3		10	56.5	0.9		9.2	0 13.2	10.4		9.5	23.8	44.2	
9.9	37.3	26.1		9.1	19.8	22.4		9.4	45 30.7	32.5		9.5	50.9	25.6		9.0	30.2	17.7	A
8.2	58.7	15.7	A	9.5	30 13.6	29.3		10	46 5.0	44.2		8.7	54.2	2.6	A	9.8	14 30.5	51.8	
9.1	59.0	18.5	A	9.3	22.6	42.5		9.2	5.2	13.5		9.4	1 1.7	34.4		9.7	37.0	56.9	
9.1	15 2.1	57.1		9.0	35.8	4.1	A	9.1	21.7	11.2		7.7	3.2	48.5	B	9.5	46.2	8.4	
8.9	5.7	32.7	B	9.8	31 33.2	56.8		9.5	22.0	41.9		10	12.6	38.0		9.0	49.6	23.6	A
8.9	8.8	26.6	B	10	36.5	36.6		9.8	28.2	13.8		9.2	31.5	36.0		9.5	58.5	18.0	
9.4	13.4	4.4		9.5	32 1.1	39.8		8.5	37.4	14.5		10	33.1	32.2		8.6	15 5.9	23.5	A
8.9	19.1	5.4		9.0	10.2	39.4		8.9	54.5	0.9	A	9.1	41.5	38.2		9.7	28.5	32.7	
9.3	24.7	34.2		10	35.0	1.0		9.8	47 46.6	12.7		10	2 1.4	2.9		9.9	29.9	3.8	
8.3	16 3.3	29.7	A	9.2	35.3	4.3		8.0	52.1	32.4	B	10	15.1	47.5		10	52.3	45.7	
9.7	6.9	45.3		9.4	58.4	46.8		9.4	59.6	12.0		9.0	35.9	18.5	A	9.3	16 29.1	0.3	
8.8	33.6	37.8	A	7.7	33 1.2	3.0	A	9.8	48 19.3	24.6		10	36.9	31.1		8.5	33.4	26.6	A
8.5	17 50.4	49.8	A	10	20.5	40.8		9.4	32.5	26.1		9.6	3 27.3	23.1		9.4	35.3	55.0	
9.8	59.4	2.7		9.4	23.6	36.7		9.4	36.5	56.2		8.6	55.4	11.8	A	9.9	17 1.5	49.2	
9.8	18 11.5	45.5		9.4	43.8	38.1		9.0	49 19.7	44.5	B	9.8	4 5.5	4.2		9.8	45.5	51.2	
9.5	26.1	35.0		8.0	52.3	49.2	A	9.3	35.1	13.0		9.0	18.3	21.2	A	9.4	18 7.8	44.9	
9.5	19 11.5	54.5		9.6	34 12.9	5.9		9.5	50 17.0	41.7		9.8	32.3	22.7		9.6	29.4	33.3	
9.0	18.5	56.3	A	9.5	40.6	56.2		9.0	19.4	54.4		9.4	34.3	1.1		10	38.8	44.6	
7.3	23.4	10.3	B	8.3	35 28.2	17.1	A	8.8	51 6.2	23.9	A	9.4	43.6	28.3		9.1	19 0.4	44.1	A
8.5	47.3	16.7	B	10	33.8	13.5		7.3	7.4	55.0	B	10	5 16.0	1.0		9.4	6.7	19.6	
10	20 0.7	22.2		9.6	36.5	15.6		8.8	38.6	8.3	A	9.8	18.4	0.8		8.8	23.4	45.0	A
8.9	12.5	33.1		9.1	43.2	5.5		9.6	47.4	54.1		9.1	54.9	38.2		9.7	37.3	50.7	
9.5	18.0	37.8		8.7	50.6	21.6	A	9.4	52 2.1	10.5		9.1	6 8.5	11.8		9.4	54.1	27.4	
9.7	50.9	45.0		9.9	36 0.8	48.6		10	4.1	43.1		9.9	10.1	8.4		9.6	59.3	17.1	
9.7	51.6	42.0		9.5	19.1	17.7		9.3	5.2	14.7		8.9	13.3	21.1		9.8	20 18.2	36.5	
8.7	21 0.0	27.8	A	9.6	39.6	47.0		10	26.3	19.7		9.4	27.8	6.2		9.5	58.6	48.1	
9.3	0.1	14.6		7.5	39.7	12.3	A	8.7	37.4	58.5	B	8.5	30.8	40.1	A	9.6	21 21.5	57.0	
10	17.5	30.0		9.5	37 11.5	23.1		9.2	59.7	24.5	A	8.2	47.0	45.3	A	8.8	27.2	36.2	
9.5	23.2	18.2		9.3	15.5	21.5	A	9.6	53 31.8	53.2		9.6	52.6	49.3		9.1	32.4	31.8	

4101—4160				4161—4220				4221—4280				4281—4340				4341—4400			
	14h		—17°		14h		—17°		14h—15h		—17°		15h		—17°		15h		—17°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
10	21	43.0	37.2	9.9	35	57.8	42.6	9.7	49	58.5	45.4	9.1	5	34.9	57.1	A	9.6	21	2.4	24.5	
9.2		44.6	21.6	A	9.5	36	2.7	39.9	9.5	50	0.4	15.9	9.3		43.2	47.9		9.6		3.0	12.2	
9.4	22	2.7	42.2		10		9.5	57.4	9.4		15.4	44.2	7.0	6	16.1	52.7	A	9.3		9.0	48.3	
10	23	19.0	33.1		9.3		21.8	46.1	9.3		27.6	59.6	8.7		18.1	53.5	A	8.6		42.6	56.3	A
9.4		59.6	25.8		10		27.0	44.6	8.7		35.2	5.6	6.5		23.5	13.4	A	9.5		51.2	39.7	
9.2	24	5.1	27.0		9.5		44.6	5.2	9.2		55.1	34.5	10		30.1	38.3		9.3		59.0	11.5	
9.6		5.9	21.7		9.8		55.8	49.4	9.6	51	0.4	4.9	9.6		37.0	36.9		9.3		59.2	36.4	
9.6		7.8	37.5		9.9	37	8.6	53.3	10		9.3	44.5	9.7	7	24.9	39.0		9.4		59.8	42.3	
9.5		12.9	52.0		8.0		14.6	23.1	A	9.5		20.6	27.7	9.7		39.7	46.0		10	22	12.8	59.3	
8.0		19.7	14.2	A	10		39.9	49.9		9.7		54.6	31.0	9.6	8	15.7	22.9		9.7		16.2	41.8	
10		39.0	46.4		8.4		43.5	43.5	A	9.3		55.4	2.9	10		17.9	13.5		9.4		17.2	28.2	
9.2		40.0	51.7		7.3		47.9	4.8	A	9.9	52	2.2	46.5	9.3		34.9	11.9		9.6		45.7	52.0	
9.3		55.5	14.1		9.6		57.8	52.0		9.2		30.6	52.2	A	9.2		45.3	16.0		9.8		47.5	32.8	
9.1	25	4.9	23.7		9.3	38	26.6	39.6		9.4		39.2	44.5		9.6	9	50.4	14.2		10		52.7	30.8	
9.3		47.3	12.1		9.3		37.8	44.3		9.5	53	7.8	37.9		10	10	1.5	52.5		9.6	23	27.3	0.8	
9.5		48.5	46.5		9.4	39	11.9	53.9		9.3		14.5	33.5		10		7.6	58.7		8.5		42.4	59.5	B
9.5	26	43.9	8.9		9.1		14.4	52.5	A	9.3		46.6	28.5	A	9.8		18.7	38.7		9.6		44.3	38.1	
9.9	27	21.9	33.5		9.1		31.0	49.6		9.3		49.5	29.6	A	9.5		27.0	51.8		10		53.9	52.0	
9.0		39.9	4.4	A	9.8	40	5.6	13.8		9.6	54	4.3	16.8		9.9		36.9	38.1		9.5	24	23.2	58.0	
9.3		42.0	29.8		8.8		23.9	27.0	A	8.8		34.8	52.0	A	7.8	11	14.7	45.4	A	9.5		23.8	25.0	
9.7		44.8	51.8		9.5		24.6	56.3		8.8		36.1	23.3	A	9.1		16.6	48.2	A	9.0		33.2	26.2	A
8.5		45.1	24.2	A	9.5		29.5	29.1		9.5		36.4	6.4	A	9.2		20.5	19.3		9.1		37.9	16.1	A
9.5	28	18.0	20.0		10	41	27.1	16.1		6.8		58.3	3.5	A	10		22.2	21.1		9.8		41.3	25.7	
9.8		31.2	41.7		9.5		43.8	29.0		10	55	18.5	31.0		10		38.9	39.4		10	25	24.0	46.6	
9.8		36.4	46.6		9.2		49.8	5.2		9.8		24.3	20.1		9.8		42.4	57.6		9.5		48.0	59.5	
8.8	29	3.8	41.9	A	9.8		55.1	48.3		8.2	56	22.4	19.9	A	10		49.6	26.7		9.7	26	6.1	31.7	
9.2		8.7	46.7	A	8.9	42	8.0	42.5	B	8.9		23.9	19.9	A	9.1		57.4	40.8	A	9.3		13.5	21.0	
9.1		42.8	10.9	A	9.8		20.5	11.6		9.6		58.9	48.6		9.4	12	11.9	10.0		8.7		13.6	12.3	A
10		56.3	16.6		9.6		21.3	1.5		8.9	57	8.8	18.6	A	9.5		13.7	20.7		9.9		18.0	6.0	
9.8	30	4.2	19.8		9.6		28.5	4.3		9.9		16.7	22.0		9.1		14.1	26.1		9.5		23.1	35.7	
9.4		12.4	14.3		9.6	43	12.8	49.0		9.3	58	35.4	4.0		9.7		32.4	4.0		9.5		50.6	30.6	
10		15.0	28.3		8.9		16.0	36.3		8.6		42.4	32.0	A	6.0		41.4	37.9	A	8.8	27	18.3	5.2	A
8.5		25.7	14.6	A	8.8		18.8	16.4		9.5	59	2.3	22.0		9.3		41.9	56.8		9.4		20.4	0.0	
9.3		44.9	26.2		8.9		20.7	7.1		9.7		13.3	3.1		8.8	13	5.0	41.5	A	10	28	12.5	32.5	
9.5		58.8	35.3		8.7		24.7	54.9		9.5		36.8	4.4		9.8		33.5	50.4		9.4		15.9	12.4	A
8.9	31	10.9	6.3	A	6.7		28.7	10.4	L	9.3		54.7	50.8		8.8		46.3	9.1	B	10		26.7	5.9	
9.8		16.7	58.5		9.1		29.0	55.0		9.5	0	18.7	54.7		8.8	14	1.3	43.9	A	9.4		29.1	41.8	
7.8		19.4	15.5	A	10		30.9	18.6		9.9		36.1	39.2		9.9		26.8	56.2		9.3		48.5	34.3	
9.5		21.2	15.6		10		37.7	49.6		8.3	1	9.9	27.4	A	9.2	15	20.0	26.6		8.0		57.1	51.3	A
9.8		37.7	50.5		6.4		43.5	45.3	A	8.8		19.2	50.5	A	10		24.9	28.7		9.0		57.7	33.0	A
9.4		43.6	50.0		9.6		57.8	7.5		9.9		47.0	20.6		9.4		50.7	13.9		9.5	29	14.9	40.9	
var	32	18.0	1.8		8.3	44	0.8	13.5	B	9.5		56.2	57.0		9.1		59.9	1.5	A	9.8		18.2	48.4	
10		27.3	28.5		9.5		30.1	46.9		7.5	2	1.3	30.0	A	9.5	16	0.6	55.2		9.9		30.7	26.1	
8.5		28.7	9.4	A	9.2	45	10.1	45.5		9.6		3.2	7.2		9.4		28.2	14.8		10	30	3.6	40.0	
9.9		30.5	31.1		9.6		12.1	42.9		9.1		21.1	39.6		9.2		36.3	51.8	A	9.4		3.8	4.9	A
9.1		43.3	21.5	B	9.8		17.2	59.7		9.8		38.4	42.7		9.3	17	6.6	4.7		8.6		13.9	58.1	A
10		47.9	41.4		10		34.1	44.6		9.1		39.6	12.7		10		24.2	4.3		9.7		16.5	36.0	
9.5	33	36.1	57.1		9.4		35.1	21.3		9.3	3	29.5	14.6	A	9.4		24.3	35.1		7.2		25.9	11.0	A
9.6		42.6	25.1		9.3	46	12.2	34.4		9.6		30.4	2.2		9.6		54.1	49.9		9.1		29.5	31.5	
9.4	34	2.5	31.8		9.5		57.8	40.6		9.1		38.5	12.3	A	8.7	18	9.4	29.1	A	9.6		36.6	21.5	
9.9		7.3	10.7		8.5	47	5.2	34.1	A	10		46.6	10.0		9.7		9.7	39.2		9.9		37.6	19.5	
8.3		11.6	11.9	A	9.8		26.7	31.8		8.9		53.7	38.6	A	10		15.0	19.1		9.8		40.2	15.9	
10		12.5	59.4		9.7		36.2	7.7		7.0	4	14.8	32.2	A	9.5		16.3	4.3		9.1	31	14.0	49.9	A
8.4		21.6	41.9	A	8.2		41.2	46.2	A	9.5		25.3	23.1		10		33.1	18.0		9.1		14.9	52.4	A
8.9		24.1	35.7		9.7	48	48.0	43.9		9.8		46.1	10.0		9.1		34.1	29.6	A	9.2	32	4.3	3.1	
9.6		25.0	14.8		10		58.2	51.2		9.6		47.5	0.1		9.7		45.2	56.1		9.1		6.4	45.3	A
8.7		36.0	43.3	A	10	49	3.6	53.8		9.4		49.0	39.0		9.4		59.8	35.4		9.1		6.8	21.5	
9.7	35	0.2	20.8		10		9.9	42.0		9.3	5	12.8	50.7		9.8	19	27.7	53.6		9.5		7.7	49.8	
9.3		30.3	17.2		8.9		27.7	20.8	A	10		15.2	31.3		9.8		35.1	8.5		9.0		16.9	34.9	
10		44.1	46.7		9.0		38.7	25.7	A	9.2		34.6	41.1	A	9.1	20	57.0	13.2		9.8		52.6	15.5	

4401—4460					4461—4520					4521—4580					4581—4640					4641—4700				
	15h		—17°			15h—16h		—17°			16h		—17°			16h		—17°			16h		—17°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.8	33	9.3	50.4		8.5	50	9.0	19.7	A	9.5	6	35.7	14.9		8.8	20	23.9	8.6		8.9	41	43.6	52.5	
10		30.4	36.4		9.4		23.7	7.5		9.4		45.0	59.8		9.8		37.6	34.0		9.5		54.3	2.0	
9.4	34	31.3	35.0		9.5		27.0	2.3	A	9.3	7	7.6	42.8		9.4		50.7	52.5		8.2	42	58.9	41.1	A
10		44.2	44.3		9.5		55.1	8.8		9.4		10.7	38.9		9.3	21	6.6	40.6		8.9	43	37.0	25.5	
9.1		49.9	14.2	WC	9.1	51	7.4	50.2		9.3		11.9	41.9		8.7		16.3	55.0	A	9.5		41.2	13.3	
9.1		52.3	53.1		9.5		22.0	3.0		9.6		42.6	16.9		8.8		53.9	41.0		7.6	45	31.6	44.0	A
10	35	29.6	49.1		9.4	52	20.1	14.8		9.8	8	2.2	3.1		9.5	22	21.5	33.9		9.3		48.0	26.8	
9.4		30.9	28.8		9.1		25.1	5.2	A	9.7		3.0	37.7		9.7		24.9	47.4		9.4		51.3	47.1	
9.4		31.7	20.6	A	9.1		46.2	43.7		9.1		26.7	6.9		9.1		32.6	28.5		9.7	46	1.8	38.4	
9.4		35.1	14.4		9.2		50.0	19.2		10		30.7	35.0		9.5	23	16.5	53.4		9.7		5.4	37.6	
9.8		45.2	56.0		8.7	54	16.8	27.0	A	9.6		37.4	58.5		8.0		17.3	23.7	A	9.8		12.5	57.6	
9.6		54.7	41.5		8.2		19.7	45.9	B	9.3		58.5	22.1		9.1		43.0	27.5		9.5		27.1	18.6	
9.2	36	35.6	14.4	A	9.5		20.1	18.0		9.1	9	31.4	55.3		9.3		54.6	57.6		9.4		29.4	56.6	
9.5	37	10.9	21.1		9.2		22.3	29.2	A	7.1	10	7.2	1.4	A	9.0	24	0.8	41.2		9.5		31.2	27.7	
9.1		46.2	43.1	B	9.6		31.5	29.0		9.1		30.0	21.0		9.1		10.2	19.6		9.6		48.7	40.0	
9.5		53.7	46.6		9.0		34.7	1.4		9.4		38.2	2.3		9.1		29.2	0.1		9.3		51.1	51.8	
8.9	38	4.6	41.0	B	9.5		47.4	9.5		9.5		56.1	4.3		9.9		32.1	27.9		9.5	47	8.9	27.7	
9.5		15.9	44.4		8.0		58.2	51.8	A	9.5		56.8	36.9		9.5	25	2.5	57.0		9.8		28.0	51.0	
9.5		19.0	11.6		9.8	55	29.4	24.9		10	11	15.3	37.1		9.5		12.8	42.0		8.2		35.3	40.3	A
9.3		56.7	34.2		9.8		30.2	49.0		9.8		21.2	40.1		9.5		48.4	47.2		9.5		42.5	47.4	
8.0	39	2.7	37.9	A	9.4	56	12.6	59.5		9.5		22.9	26.4		8.3	26	28.5	59.6	B	9.1	48	3.1	34.3	
9.8		6.8	7.2		10		35.3	14.5		9.0		43.1	8.5	B	9.7		33.5	12.3		9.3		3.5	15.8	
9.3		28.5	51.0		9.8		47.0	9.6		9.4		54.8	35.6		9.7	28	8.1	40.1		8.5		9.4	53.6	A
9.8		30.6	4.5		9.8	57	4.3	55.4		9.6	12	9.9	51.7		9.0	29	0.6	10.0		9.6		29.4	26.3	
9.0		48.0	19.9		9.4		32.6	1.7		9.5		27.8	40.9		9.6		47.3	49.0		8.4		42.4	41.6	A
9.5	40	1.5	17.4		9.5		48.3	23.0		9.4		35.9	24.4		7.2	30	4.4	55.4	B	9.8		43.4	27.6	
8.6		3.3	59.3	A	9.7		53.4	50.4		9.5		42.9	52.1		9.8		13.4	53.7		7.8		44.3	34.5	A
9.4		22.0	57.6		9.5	58	6.7	55.6		9.0		43.3	21.1	A	9.0		24.3	36.2		9.4	49	6.9	28.1	
9.1		33.2	34.1		9.5		10.1	38.0		9.8	13	11.2	43.6		9.9		54.2	40.0		9.3		13.9	23.5	
10	41	15.8	23.2		9.6		40.8	14.3		9.6		15.9	16.7		9.8		57.7	54.1		9.0		13.9	57.3	
6.5		34.2	27.0	A	7.5		55.6	32.4	B	9.5		23.5	5.2		9.1	31	5.9	26.3		8.7		50.2	37.6	A
7.7		45.0	41.5	A	8.8		58.2	29.1		9.1		36.8	9.9		9.4		9.3	26.3		8.9		57.3	14.4	
9.2		54.5	46.7		8.2	59	0.7	58.3	A	9.8	14	5.3	42.4		8.9	32	22.1	1.9	A	9.0	50	12.9	49.4	
9.1	42	4.6	6.7		7.0		46.2	50.5	A	var		7.0	32.3		9.2		41.8	28.2		9.4		19.5	14.0	
10		9.0	42.8		10		54.9	37.4		9.9		8.9	7.4		9.5		49.3	39.7		9.5	51	8.9	40.4	
9.0		10.5	7.5		10	0	1.0	42.8		9.5		36.8	52.2		7.3		54.5	46.3	A	9.3		11.4	54.0	
8.8		18.3	51.0	A	9.7		57.4	45.0		9.5		52.4	14.5		9.5	33	4.0	51.5		8.5		47.3	59.2	A
8.7		38.1	36.1	A	9.8	1	6.4	25.0		9.5		53.7	4.0		5.3		10.8	27.4	A	9.8		59.2	58.7	
9.8		41.2	29.8		9.5		15.2	26.6		9.5		55.8	29.8		9.5		49.8	56.9		9.5	52	3.3	24.4	
9.6	43	8.0	2.7		9.5		22.1	51.4		9.5	15	4.5	6.7		9.8		58.7	40.5		9.3		11.0	6.9	
9.9		20.9	57.4		9.4		34.2	53.6		9.3		20.0	10.3		9.5	34	40.7	59.1		9.4		18.4	17.4	
7.2		57.5	59.8	A	6.5		34.4	57.1	A	9.0	16	4.8	24.9		9.5	35	3.3	25.1		9.5		26.1	49.0	
9.8	44	31.7	44.2		9.8		58.5	35.3		8.3		20.9	13.4	A	9.0		20.9	14.1		9.6		45.4	28.3	
9.5		48.5	25.7		9.5		58.9	28.2		9.4		22.0	59.5		9.0		30.8	53.8		9.5		46.6	36.6	
7.8		58.5	31.7	A	9.6		58.9	46.2		9.1		34.7	44.6		9.5		31.5	3.0		7.2		48.0	7.0	A
9.5	46	2.3	0.0		9.5	2	26.6	35.6		9.5		56.7	46.5		8.6		49.4	10.1	A	9.7		48.2	30.6	
9.8		31.9	57.9		9.8		27.3	30.2		9.2	17	7.2	31.3		9.5	36	13.7	36.2		10		50.8	39.2	
10	47	6.9	58.8		8.3		55.7	43.9	A	9.8		9.4	10.4		9.5	37	38.2	28.3		9.1	53	2.6	1.9	
9.5		24.7	9.0		10	3	11.9	29.4		9.5		25.7	4.7		9.6		46.2	40.8		9.7		17.4	51.0	
8.0		31.2	35.8	B	8.9		13.2	36.7		9.5	18	1.7	26.4		8.5		53.8	5.2	A	9.4		43.9	14.8	
8.7		41.1	27.0	B	7.3		40.6	51.0	B	9.4		18.6	40.5		8.2	38	9.7	19.4	B	9.8	54	25.5	23.5	
8.7		43.3	49.9	A	9.9	4	28.5	26.8		7.0		39.5	26.4	B	9.0		14.1	27.1		9.5		26.8	55.5	
9.0		50.7	55.2	A	10		42.5	30.5		9.2	19	0.7	57.7		9.8		34.6	59.9		9.5		34.4	6.0	
10		51.0	45.9		7.9	5	6.0	43.4	A	8.8		32.2	12.4		9.3	39	21.7	24.6		9.5	55	36.7	29.8	
10	48	0.2	43.8		9.3		15.6	18.6		8.3		39.1	31.2	B	9.3		36.2	39.7		9.4		39.8	11.7	
9.8		3.2	40.9		9.0		35.1	22.0	A	9.6		42.0	7.6		9.5		56.2	21.3		9.8		47.6	31.8	
9.5		13.6	13.4		9.4		37.0	42.9		9.7		45.1	2.4		8.9	40	32.0	50.6		8.5		52.0	4.7	
9.9		48.5	31.7		8.7		44.9	49.4	A	9.4		49.0	45.5		9.8		33.2	18.9		8.0		59.8	55.5	A
9.8		58.5	11.4		9.0		53.3	2.9	A	9.5	20	22.9	37.0		10	41	13.2	14.2		9.0	56	2.4	7.7	
9.6	49	8.9	52.2		9.8	6	16.9	46.1		7.4		23.1	39.3	A	9.5		43.3	1.4		7.0		4.8	16.4	E

4542: 42:67 8′15″.7 B_1, Ep. 1868.44

4701—4760					4761—4820					4821—4880					4881—4940					4941—5000				
	16h—17h		−17°			17h		−17°			17h		−17°			17h		−17°			17h		−17°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.5	56	11.6	40.4		8.7	8	36.2	29.4	A	8.2	21	14.9	41.3	A	9.5	31	47.3	31.6		8.0	44	50.5	26.5	A
9.2		20.9	42.6		9.6		39.2	41.7		9.0		18.1	28.4	B	9.5	32	6.0	31.9		9.4		56.4	38.0	
7.7		22.4	45.0	A	8.6	9	6.6	42.6	A	9.1		19.8	29.7		9.1		8.2	10.8	B	9.3	45	12.9	24.3	
9.8	57	6.6	29.3		8.9		14.0	40.1	A	9.6		27.7	54.2		9.9		23.2	54.9		9.2		13.3	40.5	
7.5		21.2	54.6	A	9.2		15.7	25.7		7.7		32.7	41.0	A	9.4		35.0	26.5		9.3		17.9	14.7	A
9.3		26.4	16.2		9.6		44.6	38.9		9.7		34.1	47.6		9.0		51.1	52.6	A	8.2		33.0	22.5	A
10		47.6	39.5		9.7		47.7	41.8		9.7		50.8	49.4		8.8		53.6	9.8	B	9.4		35.6	55.6	
9.3		47.8	15.8		9.2	10	12.5	57.0		9.0	22	2.7	21.2		9.1	33	6.5	30.6	A	9.8		38.8	58.0	
8.8		49.4	44.3	A	9.1		49.1	39.8	B	8.8		13.9	45.8	A	9.3		15.7	43.7		10	46	8.9	48.4	
9.8	58	12.5	41.5		9.1		53.3	21.9		9.8		31.3	9.7		9.5		24.0	48.9		9.2		17.8	44.2	
9.4		14.4	34.4		8.5	11	7.4	56.9		8.3		32.2	15.3	B	9.4		24.8	34.6	A	9.5		39.1	9.2	
9.1		39.0	38.3		9.2		19.8	39.0	A	9.8		45.8	59.2		9.4		24.9	52.3	A	9.6	47	2.9	26.6	
9.0	59	11.7	13.4		6.0		26.6	35.9	A	9.8		46.9	1.0		9.2		31.7	45.8	A	9.7		7.9	30.8	
8.9		29.3	10.2		9.7		43.2	35.0		8.0		47.6	1.4	A	9.1		34.1	17.9		9.5		12.8	56.1	
9.0		35.1	50.7		10		52.9	23.7		9.0	23	0.6	58.5	A	9.2	34	23.4	52.6	A	9.5		23.5	25.1	
9.5		44.6	10.0		9.3		56.4	2.8		9.6		6.7	11.9		9.5		39.0	30.7		9.4		26.2	15.7	
6.2		49.8	24.6	L	9.5	12	2.0	4.5		9.7		18.0	49.6		9.5		51.8	4.6		9.5		26.8	9.3	
8.0	0	0.1	58.4	A	9.7		8.8	4.6		9.5		28.7	12.9	A	8.7		53.5	25.8	A	9.0		43.0	24.5	
9.7		6.3	25.8		9.8		9.9	37.2		9.8		47.4	40.3		9.4	35	16.0	56.7		9.3		53.3	49.9	
9.5		12.7	31.0		9.7		19.9	59.4		9.8	24	21.2	18.2		9.6		19.7	48.1		9.7		55.2	35.6	
9.6		26.8	7.3		9.4		25.3	44.6		7.0		33.3	23.1	A	10		31.0	13.5		10	48	3.3	2.8	
9.5		29.8	4.6		9.1		46.8	53.2	A	9.8		43.6	20.4		9.1		34.6	26.7		9.8		23.8	7.5	
9.4		33.1	45.6		9.1		48.0	54.1	A	9.0		52.2	55.8	A	7.5		41.4	40.3	A	10		26.7	5.6	
8.0		39.2	22.6	B	9.5		59.6	44.5		9.2		59.1	11.5	A	9.2		49.4	50.1		9.4		32.9	57.4	
9.8		53.4	45.8		9.4	13	4.2	3.3		9.5	25	10.1	57.4		9.8		51.3	2.2		9.8		39.3	12.8	
10		59.1	31.1		9.9		16.0	53.9		9.4		12.9	0.1		7.0		51.3	22.0	A	9.0		40.0	15.0	
9.5	1	0.6	10.3		9.0		30.4	37.3		10		27.1	20.1		7.8	36	1.3	4.6	B	9.1	49	9.4	39.1	
9.5		10.6	18.8		8.2		37.9	4.0	A	7.7		32.3	43.8	B	9.3		11.1	24.0		9.6		19.1	12.4	
9.5		27.1	27.3		8.0		57.7	11.3	A	9.2		41.0	1.9	A	9.1		30.5	31.6		9.5		25.2	24.0	
9.5		29.9	23.6		9.0	14	5.8	11.7	A	9.0		47.2	13.2	A	8.5		31.6	9.5	A	9.2		25.8	6.1	
8.7		34.3	49.3	A	8.5		9.1	33.1	B	9.5	26	13.6	58.6		10		45.5	41.8		9.3		50.7	54.9	
9.4		38.3	46.4		9.0		41.2	58.7	A	9.5		28.1	25.3	A	9.1		51.2	10.1	A	9.7		58.7	45.7	
9.7		44.0	14.2		8.3		57.8	50.0	A	9.8		30.1	18.5		9.8	37	8.7	14.7		9.1	50	19.2	44.3	
9.1		55.8	8.9		neb	15	7.1	40.5		10		43.1	56.0		9.0		28.5	34.6		9.8		30.7	53.5	
9.9	2	18.8	38.1		8.5		18.7	14.7	A	9.8		43.2	15.4		9.6		31.6	23.4		9.3		31.2	45.7	
10		27.4	40.7		9.6		37.7	58.5		9.0	27	39.7	12.5		9.8		51.7	11.6		9.3		42.1	47.9	
9.3		38.8	58.2	A	9.0		51.2	59.8	A	7.4		46.3	45.6	A	9.4		52.7	38.3		9.3		46.6	2.6	
9.0		45.1	31.7		9.5	16	31.1	24.1		9.5	28	14.2	31.1		8.4	38	17.6	49.8	A	9.1		57.0	23.0	
9.4	3	2.3	6.6		9.4		51.7	17.3		9.9		14.4	54.4		9.1		50.0	5.0		10	51	11.0	41.4	
9.5		26.3	10.2		10	17	4.9	31.1		9.4		15.6	17.5		9.9	39	14.2	13.6		9.4		21.9	2.6	
9.8		46.2	53.6		9.1		19.3	37.9		8.7		25.3	51.6	A	9.5		20.8	54.2		8.9		39.4	46.2	
7.7		50.9	3.5		10		21.7	41.0		9.9		30.2	34.1		9.9		52.9	50.2		9.5		47.1	4.4	
8.7	4	2.2	57.3	A	9.3		31.1	43.7		9.9	29	4.3	36.7		9.4		56.6	14.3	M	9.2		57.9	46.7	
8.2		3.4	25.5	B	10		41.7	21.1		8.5		12.0	43.9	A	9.4	40	15.5	25.0		9.8	52	13.0	57.1	
9.0		9.3	48.5	A	9.5	18	3.2	57.4		9.1		22.7	9.4		9.6		20.5	40.7		9.9		39.4	38.4	
8.5		16.8	24.6	B	9.1		5.6	27.4		9.8		44.5	30.6		9.8	41	0.0	24.0		9.5		51.8	45.3	
9.5		44.4	3.8		8.9		7.8	14.4		9.8		45.4	22.8		9.3		15.3	5.4		6.0		58.1	8.7	R
9.3		46.8	19.9		9.2		16.4	45.0		9.8		51.0	22.8		8.2		29.6	15.8	A	9.4	53	2.5	0.1	
10		53.7	55.0		9.8		37.7	20.5		9.2	30	1.3	2.0		9.1		50.4	58.7		9.6		18.9	40.7	
9.4	5	13.8	41.4		9.5	19	38.1	24.8		9.8		26.6	24.7		9.1		55.5	19.6		9.4		20.5	13.6	
9.5		52.7	4.1		9.7		38.9	47.3		8.3		39.8	21.6	A	9.7		59.3	11.9		9.5		25.2	52.7	
8.2		53.8	0.7	A	10		45.4	52.8		9.8		40.2	9.9		7.3	42	31.1	12.4	A	9.5		35.1	46.2	
7.8		56.8	17.3	A	9.5	20	3.1	33.5		9.7		52.7	4.4		9.6		58.8	2.1		9.7		41.6	1.1	
9.3	7	4.6	20.8		8.3		9.2	52.0	A	9.8		55.1	59.5		9.5	43	0.4	32.0		9.7		51.6	45.9	
7.7		13.8	3.3	A	9.5		14.8	7.5		10	31	16.1	18.0		9.6		2.8	6.3		8.9		52.0	50.2	A
9.6		25.3	21.4		9.5		26.7	15.8		9.5		25.1	21.2		9.8		15.4	39.6		9.0		56.6	7.5	
9.4	8	7.2	47.1		9.4		35.6	26.7		9.5		26.7	49.7		9.8		31.3	52.9		7.8	54	16.1	31.0	A
8.7		14.7	58.2	A	9.4		37.2	22.0		9.6		29.4	48.9		9.5		43.0	8.1		9.7		24.8	42.3	
7.2		17.7	44.8	A	10		45.9	25.7		9.8		34.2	24.7		9.4		59.9	41.5		7.8		40.3	24.5	A
8.6		34.1	49.0	A	9.8	21	9.3	13.2		9.0		42.0	29.7	A	9.5	44	5.4	37.3		9.0		41.2	58.5	A

5001—5060

	17h—18h	—17°	
m	m s	′	
7.0	54 54.5	36.4	A
9.4	55 3.8	4.8	
10	24.7	24.4	
9.4	44.5	55.3	
7.3	54.6	20.7	A
9.4	56 3.5	47.7	
8.5	12.9	2.0	A
9.7	35.5	6.8	
9.4	46.0	34.7	
9.8	46.4	29.8	
9.1	57 0.4	17.9	A
9.5	9.0	47.2	
9.7	23.2	50.7	
9.9	26.6	52.9	
9.5	29.6	31.6	
9.7	31.4	0.1	
9.4	33.1	54.0	
9.4	58 2.3	53.7	
9.8	3.4	18.6	
9.0	7.5	12.5	A
9.6	10.5	41.3	
9.2	13.2	53.1	
9.5	24.5	38.4	
9.4	25.8	14.8	
9.4	48.0	3.5	
9.8	59 6.0	56.1	
9.5	18.3	34.0	
5.7	24.6	10.1	A
10	32.5	52.5	
9.5	41.2	25.4	
9.7	41.4	40.8	
9.9	52.0	1.8	
9.0	0 4.4	44.5	
8.8	19.7	59.2	
8.9	25.4	31.2	M
9.8	25.6	8.2	
9.0	31.1	0.5	A
9.8	52.3	29.7	
9.8	1 4.6	13.4	
9.5	11.7	33.2	M
9.9	21.1	34.1	
9.8	24.5	58.5	
9.8	29.2	31.9	
9.0	40.5	13.8	WC
8.2	41.2	45.2	
9.9	43.7	44.5	
9.4	52.6	15.1	
8.3	2 5.4	46.7	
9.5	10.8	45.2	
9.0	12.5	56.9	
9.5	17.8	9.7	WC
8.3	19.1	9.8	WC
9.5	19.5	16.1	
9.5	38.2	30.8	B
8.7	44.3	24.2	B
9.8	3 0.4	20.2	
9.8	21.6	15.7	
9.9	31.8	50.4	
9.2	37.0	59.6	
9.5	37.5	40.6	

5061—5120

	18h	—17°	
m	m s	′	
9.8	3 40.5	58.9	
9.4	44.7	46.1	
9.4	45.6	37.0	
9.0	47.3	24.7	
9.5	4 8.6	57.8	
9.0	17.3	26.9	WC
9.8	18.0	19.5	
9.4	19.3	29.5	
9.4	22.1	36.3	
9.8	23.0	19.8	
9.1	58.1	46.4	
9.8	5 7.0	19.3	
9.5	16.7	49.5	
8.9	18.6	11.5	M
9.0	19.5	10.1	M
9.3	25.9	25.4	
9.7	43.8	2.7	
9.5	57.0	51.7	
9.0	57.6	59.5	
9.1	6 11.9	23.6	WC
9.3	15.7	11.3	
9.8	17.4	44.6	
9.9	27.5	18.9	
9.8	28.2	40.9	
9.5	31.4	23.6	
9.8	44.8	36.3	
8.9	46.0	40.6	
8.7	50.1	8.5	M
9.8	57.8	40.4	
9.8	7 3.6	55.3	
9.6	11.9	55.0	
8.9	20.5	0.2	M
9.1	29.4	48.6	
7.5	31.1	39.2	
9.5	32.3	9.0	
9.2	41.0	7.9	
9.8	42.9	23.2	
10	8 0.2	23.6	
9.6	1.7	36.7	
9.8	9.6	56.7	
9.1	10.0	21.0	
9.2	14.8	51.6	
9.6	16.3	31.2	
9.7	16.9	40.7	
9.8	23.7	23.9	
9.8	25.1	15.6	
9.0	25.6	59.5	
9.4	30.2	7.1	
9.5	34.4	59.5	
9.7	36.8	48.5	
9.5	42.8	1.7	
6.0	45.7	24.9	WC
9.5	54.9	2.4	
10	9 1.5	45.6	
9.4	2.3	59.8	
9.8	14.0	51.2	
8.9	26.3	52.9	
9.2	35.6	39.6	
9.8	52.7	36.7	
9.5	55.9	28.0	

5121—5180

	18h	—17°	
m	m s	′	
7.8	9 58.0	34.9	
9.2	10 6.8	9.6	A
9.5	7.6	29.3	
9.3	11.4	46.3	
9.5	16.8	6.8	
9.5	20.8	23.8	
9.1	28.0	55.6	
9.1	40.7	37.1	
9.3	47.5	12.3	
9.4	11 3.8	46.7	WC
9.5	16.2	33.1	
9.5	20.3	32.9	
7.2	22.9	48.8	B
9.7	23.2	5.3	
8.2	26.0	40.0	
9.0	27.9	7.6	A
9.2	34.0	6.8	A
9.3	34.3	9.6	
9.3	37.9	7.0	A
9.7	45.8	10.3	
9.1	50.8	3.3	
9.1	12 2.0	10.3	A
9.8	5.2	9.5	
8.7	10.6	48.7	A
9.1	12.9	42.9	A
9.8	17.1	19.5	
9.9	19.2	16.0	
9.5	28.3	33.4	
8.5	34.7	12.2	A
9.1	35.9	17.4	
8.2	43.4	26.7	A
10	57.0	42.8	
9.8	13 2.5	44.2	
9.0	15.4	57.9	A
9.0	15.4	20.5	
9.5	17.0	43.4	
9.3	23.7	0.3	A
9.5	36.8	10.2	
9.2	43.6	29.4	A
9.8	43.7	25.3	
9.4	44.9	44.3	
9.1	14 2.8	35.5	
9.0	5.5	22.0	A
9.3	13.1	28.8	A
9.5	17.5	44.3	
9.4	22.6	46.9	
9.1	23.3	31.0	A
9.2	27.5	28.5	
9.5	27.7	56.5	
9.5	28.5	40.6	
8.0	33.2	44.5	A
8.8	43.4	4.7	A
9.0	55.6	20.9	A
9.5	59.0	23.8	
9.4	15 0.7	11.5	A
9.4	8.1	16.2	A
9.4	10.2	13.3	
9.8	23.8	32.7	
9.1	39.7	56.1	
9.7	42.4	25.8	

5181—5240

	18h	—17°	
m	m s	′	
10	15 45.3	35.0	
9.8	46.4	40.8	
9.1	16 6.5	59.2	M
9.3	14.0	47.0	
9.2	23.1	19.0	A
10	33.2	29.5	
9.0	49.1	35.6	
9.7	50.6	28.4	
9.5	17 2.6	22.1	
9.0	22.3	8.7	M
9.1	33.1	8.1	
9.3	39.7	52.0	
9.3	18 4.8	13.4	
8.2	13.4	44.0	B
9.4	21.5	19.2	
7.8	30.2	16.1	M
8.5	40.3	24.3	
8.8	45.9	21.5	
9.0	51.4	1.1	
9.1	19 3.2	15.3	
9.5	17.0	44.6	
9.4	23.3	41.5	
6.7	28.1	52.9	A
9.6	35.8	51.9	
9.5	48.7	59.5	
9.4	52.3	13.2	
8.7	20 8.8	3.5	A
9.2	10.3	1.7	
9.5	15.2	16.6	
9.1	26.4	12.0	
9.8	27.3	57.8	
9.8	29.6	10.4	
9.0	21 5.5	26.4	
9.4	55.9	10.0	
9.7	22 4.1	2.3	
9.7	15.4	34.0	
9.7	16.1	13.1	
9.2	17.0	18.8	
10	21.0	52.4	
9.0	26.6	21.2	
8.9	51.2	52.3	
9.4	53.9	8.4	
9.6	23 3.5	52.7	
9.1	18.8	30.4	
9.1	20.5	3.5	A
9.8	32.0	10.6	
9.1	33.2	19.9	
9.9	52.7	12.7	
9.9	24 9.1	17.5	
9.3	12.2	2.2	
9.8	24.1	17.6	
9.9	24.9	0.3	
9.6	32.3	47.0	
9.5	45.7	23.5	
9.6	25 2.0	7.4	
8.2	36.2	38.3	A
8.7	41.2	1.2	A
8.8	45.0	48.3	
9.3	46.3	46.3	
8.8	59.9	2.8	A

5241—5300

	18h	—17°	
m	m s	′	
9.3	26 13.4	56.8	
9.2	15.5	9.7	
9.2	36.3	18.4	
9.5	36.8	56.8	
7.2	44.0	5.4	A
9.2	49.8	40.4	
9.2	55.2	53.8	
9.3	58.7	37.4	
9.1	27 8.5	34.7	
9.5	13.2	42.0	
9.8	16.9	14.6	
9.4	17.6	51.0	
9.5	38.6	41.6	
9.3	42.3	48.5	
9.5	45.2	41.4	
9.2	28 2.1	10.5	
9.5	9.0	55.4	
9.5	11.2	37.2	
7.9	15.6	18.9	B
9.1	25.3	5.5	
9.1	26.8	18.8	
9.6	36.4	4.0	
9.3	39.2	40.3	
9.6	41.7	54.7	
9.3	44.0	37.7	
9.5	29 2.5	11.8	
9.0	6.8	35.3	
9.1	14.9	16.4	A
9.1	21.0	16.4	A
9.5	22.2	39.5	
7.0	26.6	20.6	A
9.1	29.1	16.1	
8.6	33.8	4.2	
9.5	30 4.8	6.1	
9.5	24.9	23.2	
9.5	30.4	25.6	
9.2	43.3	34.5	
9.2	31 1.7	48.5	
9.6	25.4	1.6	
9.7	36.3	41.8	
9.0	37.4	54.1	A
9.8	32 4.2	20.8	
9.8	8.9	7.5	
9.4	9.7	3.9	
9.5	18.3	56.4	
9.2	31.5	23.3	
9.5	33.6	17.5	
8.0	55.2	12.3	B
9.3	33 9.1	55.7	
9.5	17.1	41.8	
7.0	45.3	8.6	A
9.0	57.0	59.1	
9.3	34 17.4	3.0	
9.5	23.5	58.8	
9.0	27.1	53.3	A
9.5	27.9	49.5	
9.2	31.1	24.9	
9.5	34.4	3.1	
9.5	57.7	15.9	
9.0	35 3.9	33.3	A

5301—5360				5361—5420				5421—5480				5481—5540				5541—5600			
	18h		−17°		18h		−17°		18h		−17°		18h—19h		−17°		19h		−17°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
8.2	35	16.0	40.8	A	9.5	45	5.2	57.4		9.5	53	31.6	59.5		9.4	59	8.7	13.6		9.2	7	14.9	43.7	
9.4		21.2	16.6		8.9		11.8	6.4	M	9.5		35.0	7.7		9.5		22.0	22.1		9.2		19.9	40.5	
7.7		26.9	4.5	A	9.5		28.9	40.2		8.7		35.5	16.2	B	9.1		26.1	43.1		9.0		39.3	36.3	
9.3		49.4	40.2		9.5		34.8	38.8		9.8		37.5	29.2		9.2		29.8	25.3		9.1		39.6	28.7	
9.8	36	24.8	39.0		9.2		35.7	43.7		10		38.0	57.0		9.4		33.1	39.8		9.2		44.9	4.8	
9.8		41.2	2.4		9.3		46.6	19.5		9.5		40.3	27.3		9.5		34.7	9.0		var		52.1	13.2	B
9.5		44.0	48.4		9.5		54.4	50.1		8.0		43.2	3.3	L	9.1		38.1	53.4	M	9.5		54.0	52.1	
10	37	3.2	23.6		9.2	46	0.9	20.5		9.5		59.6	35.2		8.7		46.9	26.8	A	9.1		55.5	35.4	
10		9.4	5.0		9.1		3.2	2.7		9.5	54	0.5	22.0		9.7	0	16.5	36.5		9.5		59.3	50.3	
7.4		10.9	41.3	A	9.4		16.4	19.2		9.4		4.7	34.2		9.7		16.8	38.8		9.5	8	11.8	20.4	
9.1		25.7	54.4		8.8		23.7	20.2		8.9		22.1	12.4	A	9.4		22.2	31.4		9.1		16.2	42.9	
9.5		29.2	46.9		9.1		26.5	43.7	A	9.5		25.3	19.7		9.6		25.7	29.6		9.0		16.7	54.4	
9.3		44.5	33.7		9.5		30.6	40.2		9.5		25.4	23.0		8.1		31.4	44.9	M	9.2		22.2	48.3	
9.8		50.6	56.0		9.5		43.6	51.6		9.0		28.7	2.5	A	9.4		34.1	27.1		9.2		32.4	17.5	
9.5	38	18.5	31.6		9.0		53.5	48.5	A	9.8		31.9	55.4		7.8	1	2.3	6.8		8.2		39.3	18.0	A
9.5		19.1	27.7		9.5		57.1	32.8		9.4		38.3	30.0		9.5		16.4	37.5		9.3		42.8	22.7	
9.3		35.7	56.6		9.3	47	3.8	21.5		8.7		46.8	50.6	A	9.5		16.9	4.1		9.5		43.7	14.8	
9.5	39	16.5	28.6		8.7		14.0	55.9	A	9.5		56.5	30.9		9.5		28.6	56.6		9.8		58.9	9.5	
9.2		38.1	2.4	A	9.5		18.1	4.7		9.3		58.8	17.9		9.5		30.8	41.3		9.3	9	8.1	9.5	
9.3		45.9	37.6		9.8		22.2	55.9		8.9	55	3.3	30.7		9.8		33.7	51.0		9.5		12.0	42.0	
9.8		52.8	51.4		8.4		27.2	45.2	A	9.5		12.9	40.2		8.5		39.1	44.1	A	9.5		18.0	37.4	
9.5	40	17.7	21.0		9.0		31.8	23.8		9.4		22.8	22.5		9.2		58.8	49.4		9.4		19.6	30.4	
9.5		19.3	4.5		9.7		33.0	35.2		9.6		22.9	28.3		9.5	2	10.9	11.0		9.9		24.2	51.8	
8.0		20.2	11.4	A	9.5		38.7	5.0		9.5		37.0	18.5		9.4		13.6	23.0		7.8		28.9	10.6	B
9.3		27.4	17.2		9.5		45.8	23.8		8.1		42.0	5.8	A	9.0		15.0	58.1		9.9		34.4	43.5	
9.3		43.3	2.3	A	9.0		57.3	40.3	A	8.3		42.4	58.1	A	9.5		29.6	27.1		9.7		35.2	56.9	
9.4		46.7	57.7		10	48	5.0	18.0		9.4		43.9	49.2		9.4		32.4	10.4		10		39.1	43.3	
9.5		57.6	59.3		7.2		18.9	37.5	A	9.7		48.7	2.2		9.4		39.8	44.3		9.7		39.1	52.4	
9.4		58.6	15.5		8.7		25.1	25.5	A	9.5		49.3	5.2		9.5		46.5	29.2		9.3		51.0	38.5	
10	41	6.1	45.8		9.7		40.3	43.0		9.4	56	10.3	29.0		8.3		51.1	40.0	A	8.7		55.9	15.4	A
9.4		6.4	12.5		9.8	49	15.2	59.9		9.5		22.2	54.5		9.5	3	1.0	59.3		8.3	10	0.3	19.6	A
8.1		12.2	3.5	A	9.7		21.2	47.9		9.6		22.3	28.9		9.5		20.6	2.8		10		2.3	15.4	
9.3		18.9	15.5		9.6		44.4	55.0		8.2		23.4	32.3	A	9.4		25.3	14.4		8.2		12.7	28.5	
8.9		25.3	4.8		9.4		51.6	25.4		8.0		27.4	4.1	A	9.3		32.5	50.7		9.0		20.4	16.1	A
9.9		54.1	12.5		9.2	50	4.3	28.7		10		32.0	43.1		9.2		36.3	13.6		9.4		26.9	9.4	
9.0		57.7	23.6		9.0		9.0	40.0	A	9.5		44.6	49.0		9.7		39.4	33.2		9.5		32.0	5.1	
9.6	42	11.6	10.1		9.4		10.5	18.4		9.8		45.2	27.9		9.2		48.4	56.2		9.8		35.4	44.4	
9.6		12.9	8.8		9.6		19.4	19.6		9.4		51.6	0.5	A	9.5		48.5	50.1		8.3		39.1	9.4	A
9.5		17.0	35.9		9.5		25.3	43.2		8.0		52.7	4.6	A	9.5		56.9	38.8		9.0	11	1.6	12.9	M
9.3		19.8	53.3		9.5		43.6	2.6		9.0	57	8.1	22.7		9.4	4	16.3	17.2		9.4		2.3	37.8	
9.2		34.1	56.7		9.0		45.5	16.6		9.5		32.0	39.3		8.9		21.6	14.2		9.3		10.7	14.7	
8.3		34.6	57.5	A	9.7		46.3	44.7		10		34.8	50.8		8.8		31.8	14.0	A	9.5		16.1	10.0	
9.4		36.5	40.5		9.4		53.3	9.6		9.5		37.1	27.3		9.7		38.2	53.9		9.4		19.1	8.6	
8.3		46.3	52.0	A	9.8		54.3	11.6		9.7		43.6	50.9		9.7		51.3	49.1		8.7		20.4	16.0	A
9.0		51.8	33.4	A	9.8	51	11.5	15.0		9.5		46.2	42.9		9.1		52.1	20.7	M	9.9		20.9	13.1	
9.3		52.8	34.8		9.2		46.8	47.2		9.8	58	1.8	7.8		9.3		52.3	19.8		9.8		31.9	45.1	
6.8		55.3	18.9		9.7		53.8	28.0		9.4		14.7	27.5		9.0	5	26.2	4.4		9.5	12	6.5	26.8	
9.5		57.4	59.6		9.5		57.3	53.8		9.1		16.4	31.0		9.3		28.3	47.3		8.1		10.1	18.3	A
9.0		58.2	2.1	A	7.8	52	0.2	41.2	A	8.8		19.0	27.4	A	9.5		31.0	55.1		9.0		14.2	23.5	A
8.4	43	11.4	28.1		8.6		4.0	11.1	A	9.0		19.1	19.2		9.4		38.5	31.7		10		20.0	41.6	
9.4		13.0	12.8		9.8		5.8	34.7		9.8		25.1	9.8		9.5		48.9	36.4		9.5		20.9	11.9	
9.1		32.7	20.2		10		16.4	7.5		9.8		28.5	59.1		9.5		53.5	16.1		9.4		21.7	43.4	
8.7		37.9	1.7	A	9.4		18.0	10.3		10		33.0	15.7		9.3	6	10.9	42.6		9.4		28.4	14.7	
9.3		39.1	32.7		8.5		18.6	24.0	A	10		34.9	22.2		9.0		21.8	15.8	M	9.9		30.9	32.7	
9.4		43.9	13.2		10	53	3.5	16.3		9.4		45.4	30.2		6.8		26.0	35.5	A	9.5		32.6	42.9	
9.4		54.1	30.4		9.8		6.4	33.7		9.8		50.9	7.7		9.0		26.6	58.2	A	9.4		46.5	21.1	
9.5	44	6.1	20.4		9.8		15.8	29.9		9.7		53.4	8.6		9.0		34.3	19.9	M	8.8	13	4.1	29.3	A
9.5		6.5	14.0		9.8		22.4	21.6		7.1		54.6	27.2	A	9.5		42.6	29.0		7.2		19.3	30.5	A
9.1		19.8	35.5		8.0		26.0	32.7	A	9.0		56.0	21.9		9.5		46.8	12.2		9.5		20.2	45.7	
9.5		37.7	27.0		9.5		30.2	41.5		9.5	59	1.8	51.4		8.8	7	11.7	6.6		9.7		44.8	4.7	

5601—5660				5661—5720				5721—5780				5781—5840				5841—5900			
	19h	—17°			19h	—17°			19h	—17°			19h	—17°			19h—20h	—17°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.1	13 56.7	35.3		9.7	23 54.9	35.5		9.3	34 30.7	59.9		9.3	45 0.0	44.9		8.5	55 22.0	8.8	A
9.4	14 22.1	17.3		9.5	55.4	15.5		9.7	31.9	38.7		9.5	9.1	13.4		9.8	37.9	40.0	
9.4	25.4	28.2		9.7	24 36.5	3.9		9.5	38.4	22.7		9.8	14.1	17.9		8.9	40.3	2.4	A
8.2	35.7	47.4	A	9.4	47.3	41.7		9.3	41.4	43.4		9.3	28.3	17.0		9.4	47.1	36.1	
9.2	36.6	35.8		8.8	25 0.2	21.7	M	9.5	53.0	30.1		8.3	31.5	1.1	M	10	47.6	27.2	
9.8	15 0.4	28.5		9.0	14.3	7.5	A	9.5	35 2.1	14.0		9.2	43.1	50.1		9.5	50.7	43.2	
9.5	3.9	2.4		9.4	17.6	5.6		9.8	23.0	52.5		8.7	48.0	47.1	A	8.8	56 3.0	51.8	
8.8	15.8	52.4	A	9.3	22.4	18.0		9.6	23.6	18.0		9.8	54.6	43.0		9.8	3.1	57.8	
9.5	16.5	58.0		9.0	29.4	58.9		9.8	45.0	59.1		9.4	46 16.8	51.9		9.8	3.9	16.0	
9.3	21.6	43.3		9.8	37.4	57.2		10	54.2	43.4		9.4	17.0	9.1		9.6	7.1	21.0	
7.0	26.6	27.7	B	9.0	46.3	15.7		10	36 9.2	56.4		8.6	36.9	25.8	A	10	17.0	31.3	
10	39.4	35.7		9.0	47.4	37.2	M	7.8	9.6	44.3	A	9.7	38.7	16.6		9.5	48.0	0.5	
9.4	44.6	47.0		9.0	26 15.0	21.3		8.9	29.8	46.7	A	9.8	39.4	19.8		9.3	57.0	17.8	
9.8	59.5	44.4		10	16.9	27.2		9.4	29.9	59.8		9.6	54.9	8.8	A	9.5	57 10.3	48.0	
9.8	16 17.8	53.5		9.5	36.1	0.9		10	49.0	26.1		8.5	47 16.1	56.3	A	9.8	23.7	53.4	
9.3	25.8	54.1		9.5	54.8	0.7		9.0	53.1	50.1	A	10	26.0	46.6		9.7	24.0	7.7	
8.8	35.2	47.0	M	9.8	56.9	42.8		9.0	56.2	25.7	A	9.5	31.9	53.3		9.0	31.2	11.0	A
9.0	39.3	57.8	A	9.5	27 8.6	43.5		9.3	56.4	15.3		9.3	39.7	29.7		9.6	58 6.2	53.8	
9.3	53.9	9.2		9.5	35.9	27.3		9.7	37 21.1	6.1		9.8	49.8	2.6		9.4	22.1	26.8	
8.7	57.3	55.5	A	9.8	45.6	8.5		10	37.1	9.2		9.9	54.2	24.6		7.8	45.2	36.0	A
7.8	58.4	6.8	A	9.3	28 6.5	11.0		9.3	38.5	57.9		9.8	48 31.0	43.0		8.7	59 10.4	22.1	
7.9	17 0.2	1.1	A	9.8	13.8	58.8		9.8	43.4	34.3		9.1	44.8	51.3		9.3	24.6	7.7	
9.3	15.0	13.5		9.1	16.0	53.1		9.0	38 21.5	31.9	A	9.5	49 0.0	1.9		9.1	25.9	49.9	
9.5	26.8	27.1		10	19.2	42.6		10	28.2	0.3		8.9	9.7	28.0	M	9.1	26.1	24.7	A
9.6	28.5	27.6		7.8	19.6	38.6	A	9.5	35.3	54.7		9.8	13.1	37.3		9.2	44.3	14.0	
9.8	34.1	17.4		9.9	24.6	56.8		7.0	48.7	25.5	A	9.9	14.7	25.6		9.8	52.0	23.4	
9.1	43.3	8.0		9.9	39.2	1.0		9.5	39 4.4	31.0		9.7	18.0	25.1		10	0 10.3	18.4	
9.8	45.6	52.5		9.5	43.9	38.4		7.5	20.0	25.2	A	9.5	18.4	50.4		9.4	10.8	46.8	
8.0	59.7	24.9	A	9.2	49.6	2.2		9.3	37.0	28.9		9.5	27.6	54.5		9.3	11.5	49.0	
10	18 0.1	56.5		8.2	56.9	29.1	A	8.0	39.6	50.0	A	9.1	43.4	53.8		9.8	30.1	13.4	
9.6	15.8	12.9		9.5	29 28.5	52.4		9.4	42.6	46.3		9.5	50 11.2	26.4		9.8	43.1	34.0	
9.6	16.0	13.7		9.6	29.4	32.2		9.2	58.1	4.1		9.5	23.7	45.7		9.8	51.3	23.7	
7.9	25.5	4.2	A	9.7	32.9	31.4		9.2	40 12.5	29.8		9.5	28.7	52.9		9.8	1 14.2	33.1	
10	25.7	46.0		9.7	43.2	53.5		9.8	48.6	40.3		9.5	33.8	22.6		9.8	30.7	55.4	
9.5	28.2	42.7		9.7	49.3	40.5		9.2	57.6	47.1	B	9.5	40.1	26.7		8.3	35.4	31.9	B
9.4	34.8	18.1		8.5	30 21.4	25.0	A	9.5	41 2.0	26.3		9.3	51 12.2	27.1		9.6	39.1	2.2	
9.5	53.3	54.9		9.5	23.5	49.6		9.7	5.4	3.9		9.5	16.4	58.3		9.5	48.1	11.8	
9.3	19 2.3	58.0		9.0	48.5	43.8		9.7	24.2	22.0		10	32.2	9.1		9.8	2 4.4	6.8	
9.1	14.2	37.8		6.8	52.2	13.9	A	9.1	40.9	40.5		9.5	35.1	32.3		9.3	6.3	18.0	
9.3	20 2.2	31.1		9.7	31 4.7	55.4		9.3	47.4	4.8		9.4	48.7	54.9		9.6	8.2	26.1	
9.3	12.8	9.0		9.5	30.0	18.4		9.5	48.7	52.3		9.5	52.1	37.3		9.5	21.2	29.6	
9.5	15.1	58.5		9.5	35.7	29.7		9.8	42 1.0	41.5		9.5	52 12.0	27.8		9.5	29.8	11.2	
9.0	40.7	52.0	A	9.0	36.0	22.5		9.8	2.2	17.0		9.4	22.1	28.9		9.6	30.3	59.0	
9.3	57.3	59.5		8.8	38.7	46.8	A	9.5	32.0	25.1		9.5	36.3	3.6		8.3	51.7	23.6	A
10	58.2	47.5		9.5	57.5	56.1		9.5	34.6	51.8		10	41.2	11.0		10	3 0.2	31.8	
10	21 16.1	5.1		8.5	58.0	12.5	A	9.3	43 9.1	12.6		9.8	41.6	34.7		9.8	9.2	37.2	
8.5	41.0	51.3	A	9.5	32 2.0	14.0		9.6	17.6	15.7		9.0	46.2	48.2		9.7	22.7	8.8	
9.7	22 23.0	20.1		9.3	15.0	16.3		8.5	25.0	37.6	A	9.4	48.7	35.6		9.5	34.8	56.9	
8.7	25.1	29.9	M	9.5	24.4	52.5		9.4	30.5	54.9		10	53 4.9	26.0		9.4	47.7	45.9	
8.8	33.0	3.3		9.3	24.7	10.5		9.5	37.6	58.5		9.4	8.5	31.8		9.4	51.3	53.6	
8.7	33.1	31.9	M	9.5	50.4	5.2		9.0	42.6	39.5		9.4	12.2	53.6		8.9	54.2	16.9	M
10	34.5	52.9		9.3	54.2	26.4		9.3	44.3	8.4		7.3	14.6	15.2	A	9.8	54.2	32.3	
9.2	47.1	0.2		9.8	56.4	39.6		9.0	47.1	45.3		9.2	18.0	12.9		9.0	4 0.2	27.8	
9.4	54.4	14.3		9.2	33 8.0	40.6		9.3	52.0	36.4	A	9.5	22.1	32.4		9.1	12.3	58.9	
8.5	23 1.4	58.1	WZ	10	14.5	21.4		9.8	57.2	7.3		7.3	32.2	56.5	A	9.3	29.8	1.8	
9.2	13.9	34.6		9.5	26.0	15.9		7.8	44 7.3	14.8	M	9.8	43.4	57.2		9.8	35.7	46.1	
9.0	15.8	37.4		9.5	42.0	22.1		9.5	18.7	43.6		9.5	54 31.7	59.7		9.8	37.7	7.9	
8.9	19.9	31.6	M	9.8	44.4	36.9		9.3	31.8	19.5		9.5	37.1	31.6		9.5	45.2	59.4	
8.3	37.5	6.9	A	9.8	53.5	32.1		8.9	33.2	23.6	M	7.4	47.7	44.6	B	9.0	48.3	46.0	
9.8	42.2	1.2		9.7	58.4	33.2		9.4	34.9	21.7		9.7	53.9	53.5		10	53.1	14.0	

5901—5960				5961—6020				6021—6080				6081—6140				6141—6200			
	20h	—17°			20h	—17°			20h	—17°			20h	—17°			20h—21h	—17°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.5	4 59.1	18.6	A	9.1	15 37.8	44.5	M	9.0	26 21.8	24.4	M	8.0	38 21.9	40.9		10	51 24.5	22.6	
9.8	5 1.6	52.4		9.4	48.7	46.5		9.6	37.8	37.1		10	34.5	26.4		9.6	33.5	49.9	
9.3	4.3	19.7	WC	9.3	52.6	26.7		10	39.7	31.2		9.3	55.3	45.3	A	10	37.4	58.5	
9.1	18.5	24.2	A	9.5	55.4	3.2		9.8	27 0.3	39.8		10	39 0.5	48.9		8.7	49.6	50.2	A
9.4	37.3	29.7		9.2	16 11.6	31.8		9.5	5.8	0.4		9.8	26.5	15.8		9.2	52 1.8	14.0	
7.7	42.8	6.1	A	9.8	14.3	21.6		9.5	8.7	2.8		9.2	48.0	0.0	M	10	6.6	16.8	
9.2	55.3	56.9		8.5	17.4	28.5	A	6.2	19.7	1.2	A	9.2	57.6	27.0		9.8	12.6	18.6	
9.2	58.4	32.2		9.4	31.4	29.0		9.4	24.2	31.1		8.0	40 2.7	16.0	A	10	25.6	13.3	
9.0	6 5.3	2.8	A	9.5	33.5	44.0		8.9	26.3	43.1		7.0	3.5	2.5	A	9.5	26.2	38.6	
8.5	37.7	11.1	A	9.8	17 2.9	10.7		9.8	36.0	5.0		10	19.8	8.6		9.5	29.1	52.9	
9.8	42.8	47.6		9.5	6.4	17.9		8.7	28 1.8	31.1	A	9.4	21.6	29.4		10	44.3	6.9	
9.5	56.2	31.1		9.1	8.9	46.9	A	10	4.2	51.3		9.8	36.6	1.8		9.8	53 8.3	57.6	
7.3	57.6	17.2	A	9.4	18 2.2	27.8		9.5	28.8	22.3		9.5	43.0	44.1		9.7	10.9	41.2	
9.8	7 6.2	32.9		9.8	13.7	41.2		9.1	38.7	30.8	B	9.8	43.1	19.8		9.0	21.5	25.4	WZ
9.6	14.7	3.7		6.8	15.5	50.7	A	9.8	41.4	15.5		9.3	53.1	28.7	A	8.0	28.5	0.3	B
9.3	46.0	31.2		9.8	20.3	25.1		9.5	29 5.3	4.0		9.8	54.5	50.5		10	37.9	58.2	
9.8	52.0	58.2		9.8	33.4	17.1		9.5	6.4	22.9	R	9.3	41 1.0	36.6		9.8	57.0	5.1	
9.2	54.0	50.5		9.2	38.8	9.6		9.5	19.8	5.1		9.5	5.4	2.0		8.2	54 13.1	52.4	A
10	55.9	44.9		8.5	52.6	34.0	A	7.2	35.2	37.2	A	9.1	13.2	9.5		9.8	19.7	22.8	
10	56.7	31.6		9.1	58.1	27.2		9.3	43.0	48.7	A	9.7	33.0	5.3		9.8	20.8	59.8	
8.0	8 6.1	18.0	A	9.8	19 10.4	9.9		10	46.3	3.7		9.3	50.1	28.8		10	55 34.6	20.5	
9.8	30.1	39.1		9.0	10.9	32.1	A	10	48.3	6.6		9.3	56.1	5.3	M	9.5	34.7	2.2	
10	42.4	1.6		9.7	26.8	16.7		10	48.5	50.4		9.9	42 17.3	42.7		10	37.0	42.5	
7.8	52.5	25.5	A	9.5	38.4	13.0		9.9	30 28.3	15.6		8.5	45.3	49.5	WC	9.5	40.9	21.7	
9.5	59.2	11.3		9.5	46.3	18.4		8.2	29.7	33.8	M	9.9	51.6	27.0		9.5	41.3	44.6	M
9.9	9 14.6	45.6		9.6	57.9	42.0		7.3	52.4	3.7	B	10	43 9.6	29.7		9.2	45.0	56.2	R
9.5	19.8	59.7		8.6	20 8.9	48.3	A	9.9	31 16.3	13.3		9.5	25.4	40.9		7.7	56 43.6	44.2	A
9.8	31.2	19.0		9.7	26.8	44.2		9.9	21.3	17.8		9.7	35.6	9.4		9.8	57 2.0	44.4	
9.4	34.0	33.2		9.2	29.7	58.0		10	21.8	20.0		9.8	44.2	27.5		9.9	26.0	43.0	
9.8	54.3	23.9		9.8	31.3	53.3		10	49.3	27.2		9.0	46.7	3.4	M	9.0	26.6	36.2	A
9.8	10 20.4	8.9		9.8	38.1	27.0		9.9	32 9.3	33.1		9.8	44 11.7	36.5		10	33.9	26.0	
9.3	31.8	54.6		7.3	43.8	54.2	A	10	16.6	47.1		8.7	44.4	32.6		10	35.8	29.3	
9.1	41.4	41.1		10	56.1	59.6		9.8	19.0	10.6		9.1	45 5.3	51.5	A	9.4	43.4	17.5	
9.3	47.4	39.6		9.0	21 19.3	53.0	A	9.3	32.4	25.4		9.0	30.8	25.6	M	4.0	47.8	48.0	A
9.4	48.0	32.9		9.5	27.4	47.7		9.1	43.7	53.5		9.3	33.9	46.6	A	9.0	58 11.9	25.0	
8.0	11 25.8	56.2	A	10	34.5	13.2		9.5	46.8	34.5		9.9	37.9	58.1		9.8	15.5	7.1	
9.8	41.8	59.7		9.8	35.0	35.4		9.5	33 1.6	13.7		9.2	39.2	15.5		9.5	30.5	7.1	
9.8	48.4	21.4		9.3	49.6	22.6		9.2	5.5	12.1	M	10	57.0	56.5		9.1	35.5	7.2	A
8.5	50.9	57.1	A	9.0	57.7	30.9		7.5	6.1	53.1	L	9.3	46 30.6	44.1		10	35.9	18.8	
9.4	54.7	41.4		9.8	22 0.6	41.4		8.7	34 1.3	35.5	A	9.5	31.1	14.0		9.5	44.2	58.9	
9.4	12 4.3	25.8		9.4	8.8	12.5		10	14.4	42.9		10	50.1	37.7		8.2	59 9.7	0.2	A
9.8	10.2	45.5		8.9	9.9	51.5	A	9.5	52.6	14.8		9.4	56.9	13.1		9.5	16.4	46.6	
9.4	22.4	52.0		7.8	26.0	1.6	A	9.5	35 1.2	46.9		9.0	47 10.0	5.7	A	9.5	20.0	7.0	
9.5	28.2	2.8		9.5	30.3	14.4		9.5	6.4	32.0	A	9.8	12.3	49.5	A	9.0	22.6	4.0	A
9.5	28.3	28.1		10	54.1	36.4		9.3	9.2	21.4		9.2	12.6	13.2	A	9.8	28.1	5.2	
9.7	28.4	0.4		10	23 3.7	15.3		9.5	29.8	44.9		10	27.1	14.1		9.2	48.2	2.2	
7.8	40.4	16.8	A	7.8	6.0	37.2	A	9.2	41.5	17.1	A	7.3	37.1	39.6	B	10	0 0.6	28.7	
9.0	44.3	27.8	A	9.6	22.5	13.1		9.5	45.4	7.2		9.9	51.8	44.6		9.8	3.4	5.9	
8.6	45.1	8.8	B	9.7	29.8	44.3		9.5	59.6	10.8		7.8	58.5	47.4	B	8.3	7.2	18.4	A
8.9	56.6	30.7	A	9.6	40.1	51.2		9.8	36 17.0	23.0		9.1	48 40.0	15.4		10	20.4	34.0	
8.7	13 7.2	39.9		9.5	49.0	16.5		10	17.4	17.0		9.6	46.7	38.1		9.2	34.3	52.0	A
9.2	41.5	42.6		9.7	24 0.8	53.7		9.7	49.5	38.5		9.4	49 13.4	16.7		9.6	1 8.1	59.0	A
9.4	46.1	48.5		8.6	1.9	28.9	A	9.8	37 5.2	58.8		9.1	20.0	0.2	M	7.0	19.1	12.0	A
8.0	57.3	14.0	WZ	7.0	17.9	5.5	A	9.7	10.5	11.2		9.8	52.3	34.7		9.8	20.5	34.5	
9.4	14 10.9	56.3		9.4	56.2	27.4		10	45.8	45.4		8.8	50 5.1	14.9	WZ	9.1	48.8	50.5	A
9.8	15.5	0.8		9.5	25 12.8	58.3		9.0	38 2.9	47.7	WZ	10	12.2	20.2		8.3	2 16.4	32.4	A
9.9	22.4	55.4		9.5	20.9	58.5		9.5	10.0	13.9		8.6	12.3	34.2	A	9.9	21.5	29.7	
9.4	47.7	16.0		9.9	34.2	15.0		9.5	14.4	4.4		9.6	39.3	40.8		10	36.7	10.2	
9.2	59.9	40.6		10	59.4	37.2		9.0	14.6	24.2	A	10	51 3.5	54.0		10	44.2	12.3	
9.8	15 8.2	18.2		9.2	59.4	45.5	A	8.5	20.4	13.7	A	8.5	18.7	26.2	B	9.5	50.0	26.3	

6201—6260				6261—6320				6321—6380				6381—6440				6441—6500			
21h		—17°		21h		—17°		21h		—17°		21h		—17°		21h—22h		—17°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.8	3	31.1	6.2	9.1	17	0.6	40.4	8.5	28	24.9	21.4 A	9.8	41	3.7	38.1	9.8	58	42.0	9.6
9.5	4	14.2	10.9	8.8		7.8	1.4 WZ	8.7		36.0	44.8 A	9.3		13.5	30.8	9.5	59	8.3	7.3
9.0		27.0	36.1 A	9.5		32.0	25.0	9.5	29	6.8	1.5	9.8		13.9	4.4	9.8		25.4	30.9
9.9		42.9	56.1	10		40.6	10.5	9.8		7.0	13.2	9.8		38.6	49.2	9.3		35.9	26.7
9.8		44.2	10.6	9.5		49.1	9.9	9.2		9.3	1.6	9.3		41.8	12.5	9.8		55.4	29.5
9.2		48.9	46.1 A	9.8		56.1	37.2	9.5		16.9	33.8	10		42.0	16.1	8.9		58.1	40.1
9.8		59.6	30.1	9.6	18	24.1	16.9	9.5		17.5	7.2	9.6	42	9.6	2.8	8.9	0	3.4	33.0
9.5	5	5.1	37.3	9.3		29.5	27.8	9.5		36.3	32.9	8.8		11.7	58.8 A	9.8		12.9	16.7
9.9		16.9	42.8	9.8		40.0	4.2	7.8		53.3	51.0 A	6.7		13.7	30.9 A	9.0		13.5	23.8
9.5		26.6	36.2	8.5		40.4	53.5 A	10	30	5.7	48.4	9.2		23.5	9.0	9.4		30.0	54.2
9.3		37.6	26.6	9.8		48.1	9.6	10		8.0	8.0	9.5		46.6	43.3	7.0		31.5	15.1 B
9.3		56.2	17.5	9.1	19	2.6	3.7 WZ	9.9		29.9	36.2	9.4		50.5	51.2	8.9		35.9	31.3
9.1	6	2.8	52.0 A	9.5		22.6	12.7	8.2		32.9	30.6 A	10	43	28.9	15.5	9.2		37.1	40.1
9.0		39.3	49.0 A	9.8		28.9	48.4	10		57.7	21.4	9.3		44.8	56.7	8.8		37.5	18.9
9.4		52.8	10.5	9.3		30.6	40.7	9.8	31	17.6	14.7	9.0	44	30.3	25.3 A	9.1	1	12.0	26.5
6.5		59.7	56.0 A	9.8		32.2	10.4	9.7		19.8	14.1	9.4		41.3	28.2	10		34.5	15.6
9.8	7	29.3	9.5	9.8		35.0	31.1	9.8		24.8	47.2	8.0		42.3	44.8 A	9.5		46.4	43.0
9.8		29.3	51.4	9.8		39.1	7.2	9.3		29.5	12.1	8.2	45	43.4	25.8 A	9.7	2	22.0	44.8
9.9		31.0	42.2	9.7		40.5	55.9	9.4		43.0	12.8	9.0		45.5	12.1	9.4	3	23.1	57.3
9.8		33.2	17.6	9.3		43.1	30.1	3.5	32	3.1	19.0 B	9.5		46.2	16.8	9.5	4	7.0	50.6
10	8	13.3	55.3	9.5		51.8	30.7	9.9		3.6	8.7	8.3	46	3.5	50.8 WZ	9.4		22.6	57.1
10		25.3	6.9	9.3		52.1	12.9	10		32.0	21.1	9.4		3.7	18.6 A	9.6		48.1	29.2
9.9		43.2	34.9	10		59.0	56.8	8.5		35.6	25.5 A	9.3		10.9	19.1 A	8.5	5	12.7	19.8 R
9.3		50.5	50.7 M	9.4	20	2.5	40.1	9.3		44.9	31.5	9.8	47	8.4	26.5	9.2		30.6	57.1 A
10		51.4	34.2	9.3		10.8	14.0	9.8	33	7.8	37.0	9.3		16.5	12.2	9.4		49.7	30.3
10	9	9.5	42.9	9.1		11.2	6.6	9.8		23.8	48.4	9.5		18.2	0.2	10		53.2	51.3
9.4		21.3	47.0	9.4		13.3	35.7	9.8		27.5	8.3	9.7		48.9	42.1	9.9	6	30.6	32.1
9.4		47.6	9.3	8.5		17.7	53.1 A	9.5		45.5	56.0	9.7	48	21.8	49.7	8.8		30.7	19.8
9.8	10	4.7	48.0	10		23.9	2.3	7.5		54.6	52.5 A	9.2	49	31.1	14.7	8.9	7	4.7	51.9 A
9.5		20.4	21.3	10		36.9	58.5	9.7	34	7.3	38.5	9.7	50	51.0	27.9	9.8		5.8	36.4
9.5		35.8	34.7	10		43.9	56.7	9.8		9.4	32.3	9.0	51	21.6	32.4	9.7		9.2	59.8
9.4		51.4	43.0	9.4	21	13.3	57.8	9.2		14.3	38.1	8.0		27.7	59.9	9.8		24.7	26.4
9.8	11	13.9	55.3	9.1		30.1	37.6	9.1		16.8	31.6 A	10		29.0	3.8	9.6		27.1	38.9
9.2		14.0	7.1	9.7		45.7	17.0	9.0		34.0	13.3 WZ	9.0		43.7	1.1 WZ	9.2		39.6	43.2
9.5		19.1	59.3	9.8		48.7	54.4	9.1		39.0	26.7	9.3	52	4.5	36.4	9.5		41.2	42.7
9.5		20.9	12.8	10	22	3.0	54.4	9.7		45.5	28.5	8.9		17.7	5.0 WZ	9.8		41.6	15.0
8.9		32.3	23.5 A	9.0		5.2	19.8	10		56.8	54.1	10		20.6	25.0	9.2	8	13.5	39.0
8.8	12	6.4	4.7 WZ	9.8		21.2	4.5	9.5	35	7.5	17.7	9.5		34.6	20.1	8.3		22.7	55.5 A
9.1		13.2	37.2 R	9.0		23.4	47.3	9.9		47.4	34.5	9.1	53	0.7	52.0	9.7		44.7	37.9
9.5		35.8	41.7	10		27.2	46.3	9.6	36	1.4	39.4	9.9		5.1	4.0	8.0		58.6	6.2 B
9.9		39.3	29.2	9.1		28.6	32.3	9.8		8.4	45.8	8.5		53.6	28.1	8.8	9	4.2	42.5
9.5	13	4.8	40.7	8.3	23	11.8	53.6 A	9.3		36.2	3.3	6.8	54	29.4	39.6 B	9.4		17.8	22.0
10		6.5	34.3	10		47.7	22.8	8.1		43.1	11.4 B	9.1		50.3	7.9	9.9		41.8	23.4
9.5	14	1.6	39.1	9.5		50.4	5.2	9.9		59.6	25.0	var	55	23.7	19.5	9.8	10	14.8	50.7
4.2		9.9	26.8 B	9.7	24	1.9	30.3	9.2	37	26.6	15.8	9.8		34.3	58.4	9.5		54.8	32.7
9.3		11.5	0.8	10		19.7	27.9	9.4		36.0	36.4	9.2		34.7	46.4	9.1		59.6	51.9
9.2		40.0	9.1 A	9.4		47.5	50.9	10		49.0	42.5	9.5		37.5	36.2	9.1	11	6.4	4.9 A
10	15	10.6	9.6	8.7	26	4.4	54.1 A	9.6	38	20.7	56.8	9.3		39.4	9.6	9.4		15.9	49.0
10		11.4	30.4	9.8		11.2	34.3	9.7		36.5	47.6	9.2		44.8	59.3 A	9.4		16.7	14.4
9.3		21.7	42.3	9.3		11.8	4.3	9.1		54.2	12.2 A	10		49.1	26.7	9.5		30.1	37.0
10		35.5	18.8	10		14.8	45.0	8.0	39	29.1	25.7	9.9	56	28.7	34.2	7.5		41.8	25.6 A
10		41.2	44.0	9.0		24.8	23.1 A	9.3		31.5	4.8	9.9		31.3	31.1	9.4		57.4	23.0
9.1		50.0	3.2 A	9.1		37.8	22.7 A	7.5		35.2	57.7 M	9.8	57	7.2	33.2	9.4	12	21.8	59.8
10		53.5	9.5	8.5		38.4	9.8 B	10		35.4	7.5	9.5		40.9	28.6	9.5		31.0	49.5
9.7		57.9	5.3	8.9		46.8	22.2 A	9.2		47.6	4.7	9.3		56.8	42.8	9.2		34.1	2.2
9.4	16	3.1	42.8	9.4		57.6	2.6	10		52.2	40.9	10	58	16.7	13.7	8.9		35.9	18.1 A
9.8		12.7	23.0	9.8	27	12.8	26.4	9.3	40	0.1	14.2	9.1		16.8	37.7	9.7	13	3.6	51.3
9.5		20.4	39.0	8.5		42.9	17.6 A	9.2		2.3	41.7	9.5		18.0	20.0	9.4		18.0	39.0
9.7		30.9	43.4	9.1		48.2	50.1	10		11.4	16.9	9.0		39.9	21.5	9.5		19.9	26.4
9.5		34.0	29.6	9.8	28	9.8	43.7	9.8		58.2	27.3	9.8		41.5	13.7	9.5		48.4	53.0

6501—6560				6561—6620				6621—6680				6681—6740				6741—6800			
	22h	−17°			22h	−17°			22h—23h	−17°			23h	−17°			23h	−17°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.3	14 3.7	15.6		9.8	29 30.4	39.3		9.3	48 4.4	39.1		8.3	0 36.4	50.6	A	9.0	15 11.9	58.4	A
9.1	15.4	35.4		9.8	38.9	55.1		9.7	21.5	40.5		7.8	39.0	32.2	A	8.7	37.1	19.9	A
9.7	18.2	1.4		9.0	43.1	34.7	A	10	37.7	19.3		9.8	55.0	3.6		9.1	46.4	18.8	
8.9	29.0	25.3	A	8.3	45.1	7.3	A	9.4	37.9	25.6		9.1	59.5	10.2		10	16 7.6	17.8	
9.5	33.5	16.8		9.7	30 3.2	10.5		8.8	49 11.9	2.6	A	9.8	1 45.0	49.7		9.8	13.5	20.2	
9.5	35.1	9.7		8.5	42.7	13.2	A	9.5	22.6	56.0		10	45.2	47.4		9.8	38.4	40.3	
9.9	15 20.9	10.0		10	44.7	27.9		9.7	29.5	4.1		10	2 29.0	18.0		9.4	41.6	50.6	
9.3	21.5	36.6		10	32 7.2	22.2		8.8	45.0	44.0	WZ	10	29.0	4.0		9.5	17 31.4	41.8	
9.8	46.0	56.6		9.5	7.2	28.8		10	51.4	0.2		10	54.8	59.7		9.2	18 10.1	42.7	
9.8	47.5	24.5		9.8	48.5	1.3		8.5	51.9	18.3	A	9.8	59.5	12.8		9.3	12.3	26.1	
9.0	16 6.2	59.5	A	7.5	52.3	31.5	B	9.1	58.1	52.5	M	9.0	3 34.1	16.9	WZ	9.2	50.3	36.7	
10	24.1	30.8		9.3	33 4.3	17.0		9.5	50 29.9	6.4		8.5	46.1	1.8	A	8.8	59.8	4.4	B
9.5	26.5	53.2		9.4	41.3	27.5		9.5	46.5	30.1		9.3	52.5	5.5		9.6	19 57.1	56.9	
9.8	54.4	57.1		9.3	34 2.9	10.7		9.3	54.1	13.6		8.6	4 2.4	41.4	A	9.8	20 11.9	33.9	
8.8	17 0.5	48.8	M	10	29.8	32.1		9.0	51 7.0	26.8		9.2	26.1	39.9		9.7	24.5	49.3	
9.8	5.1	26.1		9.5	35 5.1	54.4		8.5	9.1	19.0	WZ	9.4	40.1	27.8		9.7	42.8	58.1	
9.5	18 6.3	0.4		9.4	9.3	41.8		9.0	24.1	40.3		9.8	41.1	32.8		9.4	21 0.3	47.5	
9.4	19.6	38.8		10	22.5	40.5		8.2	28.7	55.8	A	9.0	43.3	54.0		9.1	32.7	14.9	
9.4	23.8	43.0		9.8	42.3	25.5		9.4	29.8	53.6		9.6	5 9.6	28.5		8.5	22 2.1	33.0	A
6.2	41.3	28.6	L	9.8	36 4.4	13.4		7.9	52 5.0	9.9	A	9.1	24.2	3.0	A	9.8	23 11.8	58.2	
6.5	42.0	28.7	L	9.6	25.7	39.1		9.4	6.8	58.3		9.9	38.8	46.3		9.4	15.9	23.9	
9.7	43.4	13.5		9.8	37.2	51.7		9.7	21.1	26.9		9.5	42.5	46.4		9.5	48.5	40.1	
9.4	45.0	18.7		9.0	37 28.0	3.2		9.7	23.0	2.5		8.8	6 2.5	42.6	WZ	9.6	24 0.6	8.8	
9.8	53.9	48.3		8.5	32.2	21.0	A	9.9	39.2	45.6		9.4	8.9	6.8	A	10	7.8	49.6	
8.8	19 6.0	21.3		9.4	32.5	19.0		9.8	53 4.6	19.3		7.8	38.9	41.6	A	9.8	39.4	46.8	
7.5	12.1	59.7		8.6	49.0	20.2	A	7.9	10.0	39.6	A	9.8	44.4	51.5		9.3	40.9	58.8	WZ
9.6	20.2	0.7		9.3	50.8	59.9		10	27.4	3.3		9.8	56.8	54.0		9.8	25 8.5	23.1	
9.4	33.2	34.9		9.5	38 13.7	3.6		9.0	54 13.7	19.0		9.4	7 3.2	32.3		9.5	9.7	32.7	
9.2	57.2	38.2		10	27.4	5.2		9.8	55.4	47.4		9.8	5.2	6.9		8.4	12.2	38.3	A
8.8	21 44.7	32.5		8.9	49.1	48.4	A	9.8	55 4.6	53.1		7.5	15.3	1.4	B	9.5	23.6	30.1	
9.8	50.8	2.7		8.0	39 14.8	10.1	A	10	57.2	11.8		9.9	18.9	18.3		9.7	27.7	21.9	
9.0	54.3	32.5		9.0	50.2	49.4	A	9.3	56 1.5	21.0		9.8	28.7	52.3		10	26 6.1	4.3	
9.7	54.8	59.7		8.6	40 15.1	18.9	A	9.6	19.8	38.9		9.0	39.2	27.9	WZ	9.4	8.3	25.5	
9.8	56.8	13.3		9.7	40.8	40.7		9.5	20.5	30.8		9.3	48.3	14.5	A	8.5	18.8	7.0	A
9.3	22 1.2	55.7		10	46.6	36.8		10	23.5	51.1		8.7	8 2.3	40.1	A	9.3	51.9	54.7	WZ
8.0	9.3	12.1	A	9.3	55.2	21.8		10	37.7	0.5		10	27.7	21.5		8.0	27 2.3	47.6	A
7.0	37.1	5.2	A	9.8	55.8	56.2		9.8	38.4	55.2		9.6	9 11.0	44.2		9.1	11.3	38.4	A
9.5	50.9	38.3		7.8	41 8.4	45.4	B	9.8	57.2	32.8		9.5	28.5	59.3		8.8	49.3	40.3	A
9.4	23 35.7	53.1		9.8	15.8	57.9		9.1	57 14.5	59.4		8.5	10 24.5	8.5	WZ	7.3	54.8	22.9	B
10	42.2	37.1		9.6	18.9	21.3		9.3	27.8	8.7		10	26.5	48.9		8.0	28 23.9	5.5	A
9.4	52.1	46.0		9.7	22.2	39.3		5.8	31.7	51.2	B	9.1	47.6	46.2		8.8	29 40.4	51.6	A
9.0	53.0	20.8		9.7	56.2	25.3		9.5	36.5	39.1		9.2	51.1	42.0		8.8	52.7	41.7	WZ
9.6	54.3	35.6		8.2	42 21.2	4.5	A	6.9	40.8	40.9	B	9.8	55.4	7.2		9.5	53.6	38.0	
10	55.2	53.4		9.2	24.3	53.1		9.3	58 2.1	51.7		9.8	11 9.9	3.4		9.9	53.9	49.2	
9.3	24 15.4	18.5		10	32.1	57.9		9.5	14.9	19.5		9.2	41.8	50.2		9.4	30 38.9	2.2	
9.0	28.9	36.4		9.5	43 0.5	34.5		9.7	21.7	51.0		9.8	12 0.9	13.2		9.4	41.7	1.5	
9.2	25 18.8	11.3		9.8	15.2	8.0		9.7	22.9	9.7		10	12.4	2.8		9.5	57.4	45.3	
9.7	26 19.8	55.5		9.8	27.3	38.1		10	23.6	26.8		9.1	14.0	30.4	A	9.1	32 11.7	50.9	A
9.0	41.0	11.6	A	9.9	39.7	21.4		9.7	48.6	6.0		9.7	14.5	39.3		9.1	19.6	11.2	
9.7	27 1.1	27.9		10	44 16.1	41.5		9.0	59 1.4	25.5	A	9.1	20.5	25.7	WZ	10	20.4	45.7	
9.5	4.6	17.4		9.1	18.3	26.8		9.8	11.3	37.7		9.3	38.3	41.7		9.5	25.0	6.8	
9.8	15.5	12.3		9.8	21.2	21.9		9.9	12.1	21.6		9.8	13 15.9	5.1		9.4	48.5	42.0	
9.8	25.3	0.9		9.5	27.0	52.7		9.4	15.4	33.8		7.2	52.1	28.8	A	9.3	50.5	25.5	
7.0	28 19.0	7.8	B	9.9	33.6	32.2		9.8	42.6	0.6		8.3	54.3	40.4	A	9.7	54.6	29.4	
9.7	29.7	30.9		8.0	43.7	25.5	A	9.9	0 1.4	25.6		9.2	14 5.6	28.0		9.5	33 2.5	19.5	
8.9	35.1	24.0		8.3	45 31.1	56.0	A	10	3.6	54.6		9.0	16.2	6.0	A	9.5	38.5	31.4	
8.7	38.2	10.9	WZ	8.5	55.7	0.7	WZ	9.9	18.5	21.6		9.0	16.6	30.4	A	8.8	34 2.6	28.9	WZ
9.1	44.8	29.0		8.8	46 33.3	48.3	WZ	9.8	19.2	25.2		9.3	40.4	58.7		9.5	4.9	23.7	
10	46.3	29.1		5.6	47 4.6	2.2	A	9.5	22.3	48.9		9.0	41.4	53.3	A	9.0	34.4	4.2	WZ
8.0	55.5	33.0		10	40.7	41.0		9.0	29.9	7.5	M	9.5	59.9	50.3		9.4	34.7	52.0	

6801—6810

	23h		−17°	
m	m	s	′	
9.4	34	44.8	52.5	
9.2		59.3	57.9	
9.5	35	47.9	57.7	
9.4	36	2.2	31.4	
9.4		12.2	25.3	
9.0		21.2	8.1	WZ
9.0		22.7	37.4	A
10		22.8	51.0	
9.5		26.2	45.2	
9.0	37	38.7	18.4	

6811—6820

	23h		−17°	
m	m	s	′	
9.4	38	8.7	5.8	
9.8		25.2	46.0	
9.4		25.7	27.8	
7.8		34.5	56.3	B
9.2		43.8	37.8	
8.4	39	36.4	54.3	A
9.8		39.3	36.0	
9.3	40	33.9	23.0	
7.0		39.9	29.9	A
10		41.1	46.8	

6821—6830

	23h		−17°	
m	m	s	′	
9.2	40	46.9	29.5	
8.8	41	11.2	4.5	A
9.1		23.9	18.1	
9.3		24.8	1.2	
8.5		36.8	4.0	A
9.7		57.9	2.7	
9.3	42	28.5	53.0	
9.5	43	16.5	9.0	
9.8		30.4	1.2	
9.6		44.5	17.9	

6831—6840

	23h		−17°	
m	m	s	′	
9.8	44	12.5	8.9	
9.1		15.9	41.2	WZ
9.6		26.7	55.1	
8.8		44.6	12.5	A
9.0	45	1.6	7.3	A
7.3		12.6	10.5	A
8.7		21.1	31.4	WZ
9.1		29.1	17.3	A
9.6		36.0	4.0	
9.4	46	7.3	57.5	

6841—6850

	23h		−17°	
m	m	s	′	
9.5	46	42.6	16.2	
9.5	47	4.0	8.7	
9.4		15.8	43.7	
9.8	48	5.7	18.9	
9.3		19.3	40.6	
9.5		29.7	9.6	
9.2	49	10.6	51.0	
9.0		12.6	51.8	
9.1		18.3	12.0	WZ
9.1	50	28.6	49.6	WZ

6851—6857

	23h		−17°	
m	m	s	′	
9.5	50	38.7	50.6	
9.5		47.8	19.6	
9.5	51	6.3	57.8	
9.8		23.7	8.8	
8.8		41.2	1.5	
8.3		51.6	44.8	WZ
9.2	52	9.4	28.4	

6858—6864

	23h		−17°	
m	m	s	′	
10	52	13.0	23.3	
10		44.9	23.7	
7.3		58.3	29.9	A
8.9	53	36.1	37.9	A
9.6		57.2	45.0	
10	54	0.6	32.1	
7.5		17.5	19.8	A

6865—6871

	23h		−17°	
m	m	s	′	
9.9	54	30.5	12.2	
9.6	55	31.5	8.4	
9.2	56	44.5	55.3	
6.2		53.7	19.7	B
9.1	57	18.9	45.8	
8.0		27.9	39.8	A
9.5	58	13.2	58.6	

6872—6878

	23h		−17°	
m	m	s	′	
9.6	58	14.3	3.0	
9.6		25.1	58.0	
8.8		57.8	14.0	A
8.6	59	1.9	32.7	WZ
9.7		18.2	2.1	
9.7		22.4	41.5	
9.5		42.8	22.7	

Zone −18°

1—40				41—80				81—120				121—160				161—200			
	0h		−18°		0h		−18°		0h		−18°		0h		−18°		0h—1h		−18°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.6	0	49.6	58.5	6.7	12	42.0	30.4	A	9.1	25	23.7	7.8		10	37	42.3	17.5		9.5	52	12.4	4.0	
9.5	1	7.3	15.7	9.8	13	5.3	37.0		8.7		37.2	29.8		9.0	38	25.2	41.4	WZ	8.3		46.9	51.1	A
6.2		8.4	23.1	A	9.7	14	2.4	18.1		9.0		45.1	54.7	A	9.3		41.6	17.6		7.7	53	28.5	54.0	A
9.8		15.1	16.6		9.0		53.0	37.2	WZ	9.0		57.1	48.7	A	8.7	39	8.2	0.3	A	9.8		50.4	4.6	
10		25.9	50.9		10	15	6.0	18.1		9.6	26	17.1	6.7		9.5		16.7	54.5		9.8	54	33.4	39.3	
9.0	2	7.0	5.9	A	9.4		51.5	2.7		9.9		20.6	4.1		9.0		25.8	59.2	WZ	10	55	26.0	8.4	
9.1		34.3	3.4	A	9.4	16	16.2	57.3		8.7		23.6	54.5	A	6.5	40	29.3	51.1	A	9.4		33.0	24.4	
9.4	3	15.0	31.5		9.5		18.0	27.4		9.5		37.7	12.8		9.2		38.2	33.7		9.9		39.1	13.2	
9.5		52.4	48.2		7.8		38.6	36.7	B	9.3		40.3	30.3		9.7	41	10.5	43.3		9.8		53.5	44.0	
9.5	4	6.7	15.8		9.4	17	9.1	17.7		10		52.5	34.8		7.3		30.2	20.4	A	10	56	11.4	15.1	
8.7		12.6	46.4	WZ	6.8	18	3.0	13.3	B	10		53.3	30.1		10		34.7	44.3		9.6		33.7	21.8	
8.7		24.0	21.8	A	8.9		21.2	22.0	WZ	9.3	27	8.2	13.2		10	42	7.7	34.3		9.4	57	11.1	46.2	
9.8		41.9	3.3		9.3		22.4	37.1		10		13.2	7.8		9.6		30.3	51.0		9.3		13.7	25.6	A
5.7		46.1	44.2	A	9.2		36.7	19.2		9.2		14.0	17.7	WZ	10	43	38.8	32.8		9.1		29.1	43.5	WZ
9.6		55.4	54.0		10		55.6	13.5		9.5	28	17.0	34.3		9.6		43.1	34.5		8.8		40.2	14.7	B
10		58.0	5.3		9.2	19	10.8	48.8		9.7		34.0	27.1		10		55.9	39.0		9.5		42.4	34.7	
9.7	5	11.7	53.6		9.8		35.7	38.8		9.8		49.8	0.2		10	44	41.0	48.2		9.4		48.1	36.2	
8.9		34.2	33.7	WZ	10		55.6	37.2		8.5	29	0.3	24.6	WZ	9.1		47.5	32.9		10	58	38.0	24.9	
9.7		38.3	16.2		8.9	20	4.2	39.1	A	8.3		27.4	35.5	A	9.2	45	24.8	7.1		9.5		44.3	57.9	
9.5		38.3	0.5		9.2		9.8	42.2		10		35.1	48.2		9.4		30.2	20.1		9.5		50.5	29.4	
9.5		47.1	16.4		9.9		12.8	12.1		9.9	30	4.8	51.5		10		33.2	32.1		9.8	59	20.6	32.9	
9.4		50.1	47.3		8.9		26.2	8.1	B	9.2		21.5	34.3		10		36.0	22.5		9.8	0	30.2	38.7	
9.8		51.4	6.6		9.8	21	9.4	58.7		9.9	32	30.9	39.0		7.1		55.5	26.5	A	9.0		47.7	25.4	WZ
9.5	6	26.4	43.4		9.0		18.2	1.6		9.1		42.9	27.7	WC	9.8		57.1	59.0		9.6	1	11.2	31.3	
7.2		32.7	21.1	A	9.9		20.4	56.2		8.8		55.6	23.1	WC	9.0	46	22.5	38.6		9.5	2	9.8	52.5	
9.5		58.4	34.3		9.1		31.3	23.2		8.5	33	21.9	41.0	WZ	8.9		46.6	47.2	A	9.1		41.0	19.7	WZ
9.1	7	5.0	3.5	A	8.7		45.7	1.2	A	9.2		30.3	28.9		8.9		55.6	49.0	A	9.0		42.1	16.1	
10		25.4	14.6		9.0		53.8	37.7		8.8		39.0	6.1		9.3	47	6.0	39.6		9.6		59.3	36.4	
9.3		26.5	29.7		9.4	22	1.9	18.8		9.5	34	3.0	57.0		9.4		34.0	35.5		9.4	3	55.2	10.2	
9.2		43.3	4.0	A	8.8		27.7	0.4	A	9.8		17.9	36.5		8.4		53.7	13.2	A	9.1	4	10.9	39.1	
9.0	8	8.6	43.3	WZ	9.1	23	8.4	36.8		9.2		24.6	0.1		9.6	48	19.3	16.7		10		20.8	31.5	
9.4		25.2	44.2		9.5		15.5	50.5		8.6		51.8	31.9	A	8.2		38.1	5.4	B	8.6		38.0	18.4	A
9.8		31.5	17.0		9.5		20.5	54.0		9.1	35	19.3	5.7		9.1		40.8	18.3		9.8		40.2	1.6	
8.3	9	11.7	41.9	A	9.6		26.9	30.5		9.5		44.5	8.3		9.3	49	50.7	44.8		8.7		51.9	35.2	A
9.8		28.8	9.9		9.4		33.4	14.6		2	36	18.1	47.0	A	10	50	25.9	17.4		9.9	5	45.2	25.1	
9.1		45.0	34.8	A	9.5		39.3	13.2		9.7		31.6	21.0		10		43.8	47.6		10		54.1	59.0	
9.2		54.0	28.6	A	9.4	24	34.4	2.3		10		43.1	23.3		10		45.8	22.8		9.8	7	17.7	24.8	
8.6	10	30.9	22.0	A	9.5		45.5	41.4		9.4	37	14.3	2.7		10	51	21.1	38.2		9.4		28.2	36.0	
7.8	12	7.1	29.1	A	10	25	9.0	38.2		9.1		35.2	15.0	WZ	9.0		30.8	47.0	WZ	8.0		40.0	0.4	B
9.0		40.9	16.7	A	8.3		17.1	54.0	A	8.7		42.1	1.6	WZ	8.6		39.2	16.4	A	7.5		54.7	56.9	B

201—260

m	1h m	s	−18° ′	″	
9.8	7	59.7	55.1		
9.5	8	16.8	22.5		
9.0		17.6	43.5		
8.2		39.7	8.9		WZ
8.3	9	38.2	55.5		WZ
9.3	10	1.5	43.6		
8.3		23.4	18.0		A
9.3		27.8	19.5		
9.8		42.5	12.5		
9.8		54.5	35.6		
9.4	11	31.4	10.7		
9.5		43.6	14.1		
9.8	12	22.8	54.8		
9.8		36.5	44.9		
10	13	11.7	21.3		
9.3	14	32.2	38.6		A
9.2	15	9.8	23.4		A
9.4		35.9	46.5		
9.9		48.2	0.4		
9.8		51.3	17.2		
9.7	16	15.8	38.7		
7.0		17.4	41.8		A
9.4		59.3	13.8		
9.9	17	27.9	18.5		
9.2		33.1	58.5		WZ
10		45.5	25.2		
9.5		55.1	1.7		
9.4	18	1.3	35.2		A
8.7		59.2	3.7		A
9.5	19	12.6	44.6		
10		19.0	22.9		
9.3		26.5	12.0		A
9.5		37.2	59.3		
6.8	21	1.5	0.5		A
8.3		9.2	48.3		WZ
9.8		17.2	49.2		
10		33.8	56.8		
9.3		45.4	8.3		
10		45.6	39.7		
6.3		54.0	40.6		B
9.4	22	10.5	7.7		
9.0		19.6	2.5		A
9.0	23	24.7	18.8		A
9.5		33.2	21.6		
9.1		37.6	29.8		
8.8		52.5	15.5		A
9.1		58.1	17.7		A
8.3	24	14.9	26.0		A
9.3		38.4	49.2		
8.7		53.5	27.0		A
8.3	25	8.4	17.0		A
10		27.4	47.6		
9.2		46.5	58.5		
8.7		51.0	21.5		A
9.2	26	15.0	57.2		
9.0	27	8.2	7.8		A
9.3		24.6	28.7		
10		40.5	43.3		
9.9		43.7	12.6		
10	28	18.2	37.4		

261—320

m	1h m	s	−18° ′	″	
9.4	28	18.4	4.6		
9.8		25.9	1.1		
9.0		26.7	8.4		WZ
10		32.8	13.5		
8.2		41.6	2.5		B
6.8		49.6	16.1		B
9.0		57.6	49.4		A
9.0	29	52.6	1.1		WZ
9.7	30	2.3	31.5		
9.5		9.4	17.6		
9.1		18.3	13.4		
9.8		18.9	55.9		
9.0		27.3	38.2		WZ
9.0	31	26.7	0.6		A
9.1		30.0	46.8		
9.8		30.8	23.1		
9.5		39.8	23.1		
9.0	32	12.8	20.0		A
7.3		20.4	31.6		A
7.8		45.6	17.4		A
9.6	33	27.3	25.1		
9.3		28.5	1.8		A
9.3	34	31.9	35.3		
8.6		32.8	43.3		A
9.8		50.7	18.8		
8.5	35	9.1	51.8		
7.2		11.0	37.7		A
9.0		35.8	32.1		
10		44.6	9.5		
9.6	36	5.2	47.9		
9.0		18.7	20.5		
9.3		20.3	20.3		
9.5		41.2	49.5		
10		53.1	52.4		
9.8		57.1	30.5		
9.4	37	4.9	42.1		
9.5		23.7	38.3		
9.6		28.5	2.2		
9.8		51.6	8.6		
9.6	38	14.2	46.1		
9.5		20.1	24.6		
10	39	0.8	24.0		
9.1		12.3	10.8		A
10		50.1	46.1		
9.4	40	14.9	23.1		A
6.9		16.7	12.4		A
8.8		53.1	53.2		
10	41	48.9	51.2		
8.7	42	4.2	29.3		
8.4		11.4	43.5		WZ
9.5		19.3	10.9		
9.6		36.4	38.6		
8.8	43	4.5	13.1		WZ
10		27.9	16.4		
9.9		36.8	32.9		
9.2		37.1	22.1		
9.0		48.4	3.8		
9.8	44	10.5	11.9		
9.5		46.8	1.8		
9.6	45	58.6	47.8		

321—380

m	1h—2h m	s	−18° ′	″	
9.4	46	3.3	24.2		
8.3		10.9	6.6		WZ
9.2		22.6	49.5		
9.5		56.1	41.1		
9.8		56.2	34.1		
9.4	47	0.0	55.2		
9.0		6.9	47.8		A
9.4		50.2	52.2		
9.8	49	4.2	14.2		
9.7		4.7	43.1		
9.8		9.3	2.5		
9.0		20.5	19.2		
8.5		51.8	43.0		A
9.1		52.8	40.7		
9.6		59.6	36.9		
7.5	50	20.1	23.0		A
9.5		27.3	42.7		
8.5		41.2	25.8		A
9.8		54.5	57.1		
9.7	51	8.8	59.8		
9.8		18.3	49.2		
9.1		24.6	16.1		A
9.5		39.9	43.0		
10		45.4	7.8		
8.0	52	8.9	45.9		A
9.5		21.0	11.3		
9.4		42.5	8.9		
9.4		44.1	17.4		
9.2	53	16.9	55.0		A
8.5	54	9.0	50.3		A
9.8		28.4	41.3		
9.6	55	33.1	52.5		
9.4	56	19.6	9.1		
10		22.2	40.8		
8.9		25.2	28.0		WZ
6.8		59.2	12.7		B
8.4	57	43.1	42.6		WZ
9.4		47.2	57.5		
9.4	58	0.2	18.5		
9.4		18.6	39.0		
9.1		29.7	7.9		A
8.7		58.2	0.6		A
9.5	59	14.8	13.3		
8.7		34.1	13.8		A
9.5		46.9	11.9		
9.5		53.9	32.8		
9.5		57.4	34.3		
9.7	0	0.6	35.2		
8.7		26.0	19.5		A
9.0		54.8	54.3		A
8.8	1	35.4	10.7		WZ
8.2		51.1	5.3		WZ
9.0		51.5	14.4		
5.7		52.9	27.7		B
8.7	2	0.5	32.4		
9.5		2.9	8.3		
10		36.4	59.7		
9.6		48.3	47.6		
9.5	4	1.9	56.5		
9.4		5.0	10.7		

381—440

m	2h m	s	−18° ′	″	
6.7	4	40.2	25.7		A
7.7	5	11.2	24.9		A
9.4		24.2	22.4		
9.0		41.7	17.0		A
8.0	7	0.5	38.5		B
10		14.6	52.1		
9.0		36.6	7.3		
8.7		38.3	28.0		B
9.8	8	0.6	49.5		
9.8		14.2	8.0		
10		24.8	25.8		
9.7		37.7	47.7		
8.9		45.1	39.9		
7.5		56.2	54.5		B
9.8	9	2.4	23.0		
9.9		14.3	13.3		
9.4		20.7	13.1		
10		37.4	26.9		
9.4	11	1.6	33.0		
9.1		31.3	57.0		
8.7		37.8	52.5		WZ
9.2		39.9	34.8		
9.5		56.2	29.4		
9.5		59.3	8.1		
9.0	12	32.2	44.5		
8.5	13	9.2	40.4		A
9.6		47.1	47.9		
9.8	14	10.9	15.2		
6.0	15	14.1	19.2		B
9.8		22.5	14.1		
9.6		29.2	25.9		
9.2		40.0	30.2		
10	16	18.4	5.9		
9.0		30.8	33.0		
9.2	17	33.4	28.9		
9.0		34.5	6.3		WZ
8.1		35.7	48.9		A
8.9		36.9	37.0		
9.5	18	3.5	55.3		
9.8		17.1	21.7		
9.6		28.7	17.2		
9.8		46.3	32.7		
9.8		47.9	59.1		
9.6	19	4.5	26.8		
9.3		25.6	49.0		
10		40.7	8.7		
9.5	20	13.1	55.9		
9.4		42.6	50.1		
9.9	21	36.4	25.5		
9.5	22	58.2	37.7		
9.3	23	0.4	21.3		
9.3		7.3	58.3		
9.0	24	42.7	38.0		
9.5		57.1	22.2		
9.8	25	15.8	44.0		
9.7		18.7	36.0		
9.8		34.3	34.1		
9.0		48.8	41.2		
9.8	26	4.4	43.0		
10		15.3	1.6		

441—500

m	2h m	s	−18° ′	″	
9.6	26	24.1	29.9		
8.6		39.7	14.1		WZ
9.0		40.3	58.9		B
9.5		41.7	10.9		
10	27	4.2	7.0		
9.3		59.4	34.7		
7.0	29	9.6	16.1		B
8.6	30	3.4	1.4		WZ
9.8	31	10.1	29.3		
9.0		19.2	9.8		WZ
9.0	32	10.6	49.4		A
10	33	9.4	20.7		
10		19.5	22.6		
9.1		19.5	30.6		A
9.8	34	20.3	8.1		
8.7		25.7	40.4		A
7.8		26.4	26.4		A
9.0		50.1	33.7		
9.5	35	31.0	7.9		
8.9		53.2	24.2		A
8.5	36	28.9	58.8		WZ
9.2		54.8	6.4		WZ
9.8	37	11.8	1.2		
9.0		13.0	58.6		
8.6	38	13.1	23.7		WZ
8.1		17.1	12.0		WZ
9.5		23.6	44.3		
9.6		40.1	31.5		
9.3	39	0.4	39.2		
9.9		6.5	53.9		
10		18.5	50.4		
8.5		48.7	39.2		A
9.3	40	23.4	14.5		
9.0		40.6	9.6		WZ
9.8		50.3	57.5		
8.8		54.9	55.5		A
9.0	41	7.3	53.0		A
9.0		16.4	57.1		A
9.1		33.0	9.5		
9.5		44.5	10.6		
9.4		45.6	35.2		
9.2	43	15.1	30.4		
9.8		20.2	21.6		
9.1		38.0	9.5		
9.5	44	41.9	44.5		
8.0	45	17.3	57.2		A
9.1		39.1	7.5		
8.5		41.3	36.8		
9.8	46	23.0	53.4		
9.4		42.8	3.0		
9.8	47	13.8	19.0		
9.9		48.6	25.6		
10	48	15.4	19.5		
9.5		21.0	14.6		
9.5		22.7	58.4		
9.4		39.1	48.3		
9.8		57.1	48.3		
9.9	49	11.0	37.1		
10	50	5.2	37.4		
9.5		57.5	55.2		

266: 49°58 16′5″.3 B_1, Ep. 1872.20
443: 40°33 59′10″.0 B_1, Ep. 1883.02

394: 56°65 54′36″.3 B_2, Ep. 1873.01

501—560				561—620				621—680				681—740				741—800			
	2h—3h		−18°		3h		−18°		3h		−18°		3h		−18°		3h—4h		−18°	
m	m	s	′		m	s	′		m	s	′		m	s	′		m	s	′	
9.6	51	27.2	42.3		9.0	6	48.2	9.8	WC	9.1	23	56.0	22.4	A	9.5	44	57.2	28.1		10	58	8.9	54.8	
9.1		29.2	47.1		9.5	7	6.4	1.5		7.5	24	15.4	57.6	B	9.7	45	4.2	4.4		8.8		21.9	21.0	
9.0		30.9	14.0	WZ	8.3		26.1	25.0	WZ	8.5		32.6	36.6		8.8		16.6	15.1		9.8	59	2.8	44.1	
9.8	52	2.5	50.7		9.8		51.7	27.3		9.8		42.5	2.5		9.4		38.6	44.3		9.6		11.3	16.2	
9.3		23.8	8.2		9.7		52.6	46.7		8.4	25	14.1	58.5		9.1		46.0	58.8		9.3		14.6	59.4	
9.5		27.9	45.1		10	8	6.4	56.9		10	26	15.0	7.1		9.8		48.3	10.6		9.3		19.2	38.0	
10		29.0	14.5		9.0		40.4	29.3		8.3		31.1	53.9		9.8		56.1	25.8		9.5		35.6	34.8	
9.0		44.8	43.1	WZ	9.4		44.8	30.0		9.8		46.3	4.6		9.8	46	9.9	44.5		9.1		36.5	13.5	A
9.3		49.4	3.0		7.0		51.9	42.9	B	9.5		55.7	38.0		8.8		21.3	37.6		9.7		40.8	13.7	
9.4	53	9.0	4.4		9.5		54.4	4.5		9.7	27	21.0	4.9		7.7		27.5	53.7	B	9.5		42.6	20.1	
9.5	54	10.7	0.3		8.0	9	11.9	54.0	B	9.8	28	11.5	58.7		6.0		42.8	52.1	B	9.5	0	1.1	36.0	
7.8		25.4	26.6	B	9.0		21.6	46.8		9.1		36.3	28.3		9.3		46.9	33.2		6.4		7.3	26.6	B
9.2		30.5	28.2		9.8		28.8	26.2		9.8	29	1.5	58.6		9.8		55.2	1.6		9.7		24.8	44.8	
9.0		48.0	17.8		9.1		56.9	43.4		9.4		37.1	40.4		9.7	47	6.0	55.3		8.3		26.4	21.3	B
9.4		59.3	47.8		8.5	10	47.0	55.7	A	9.3		48.6	0.8		9.0		47.9	40.4		9.8		37.9	59.3	
7.0	55	22.4	46.9	A	9.0		49.0	48.3		9.1		48.8	59.2		8.4		57.2	29.9		9.2		40.1	30.2	B
8.2		31.8	3.0	A	8.3		57.2	11.1	A	9.1	30	20.0	21.6	A	9.4	48	46.2	54.7		9.7	1	3.1	27.5	
9.7		43.0	39.1		9.6	11	11.9	34.2		9.4		20.9	27.5		9.2		46.2	46.4		9.4		24.7	14.1	
9.8		43.2	58.8		9.6		15.5	47.9		8.2		34.5	21.9	B	9.2		46.6	23.2		9.2		41.0	2.1	
9.0		43.9	42.7		9.6		19.5	0.0		9.9		48.9	41.5		9.6	49	4.1	29.0		9.7		54.3	18.3	
9.8		45.5	1.8		9.1		25.0	2.0		9.9		49.5	36.9		8.0		10.8	7.5	B	9.0	2	10.9	52.0	
9.7		45.7	14.8		9.2		27.6	9.5	WZ	9.0	31	22.4	8.1	A	9.6		40.1	23.6		9.0		12.1	8.0	
8.5	56	22.7	48.4	A	9.3		39.1	9.1		10		29.8	53.0		9.1	50	19.9	9.7	A	8.0		19.8	19.7	B
8.7		29.3	38.8	A	9.6		54.9	26.4		9.2	32	1.3	24.8		9.4		30.9	1.0		9.5	3	0.6	6.6	
9.4		48.9	43.5		9.5	12	7.0	58.2		9.6		20.1	24.2		8.0		33.6	58.3	B	9.9		1.2	2.8	
9.4		59.4	57.1		9.8		11.2	29.4		9.9		45.7	27.8		9.5		53.0	51.2		9.3		27.2	23.6	
7.8	57	18.1	18.3	A	10		58.5	36.2		9.2	34	23.0	51.7	A	9.8	51	2.6	53.7		9.0	4	12.7	9.1	
9.4		46.5	46.3		9.7	13	13.8	23.0		9.7		24.0	34.2		9.0		16.0	37.0		9.5		18.2	13.4	
9.9		48.7	34.7		8.8		16.7	5.3		9.4		31.1	24.1		9.8		28.7	23.3		8.0		37.4	48.2	
9.1	58	9.5	7.7	A	9.8		32.0	23.0		8.6		36.3	21.6		8.8		34.7	35.8		9.0		57.1	54.0	
9.1		20.0	56.1		8.8		33.5	31.6	A	9.1	35	0.7	54.0		9.5		49.0	13.8		9.5	5	6.0	29.1	
9.4	59	2.9	3.9		9.7		58.7	6.8		10		12.7	59.5		9.3		51.4	4.9	A	8.3		30.5	14.8	
9.0		12.3	22.5		8.0	14	4.1	2.8	A	9.3		19.5	1.1		9.3		59.6	21.5	A	8.8		33.1	26.6	
10		21.8	27.5		10		26.0	48.2		9.6		27.5	12.7		9.3	52	44.1	46.1		8.9		50.9	42.0	
9.7		41.9	32.1		9.6		43.8	34.9		9.8		31.4	28.3		9.1		46.6	47.0	A	9.2		58.3	27.9	
8.2		57.2	2.2	A	9.5	16	6.3	11.5		9.2		34.8	58.0	A	9.6	53	8.8	7.6		9.8		59.2	19.0	
9.5	0	12.1	11.8		9.4		15.5	48.0		9.8	36	28.9	1.0		7.5		15.2	19.4	A	9.5	6	25.8	36.4	
9.8		18.6	8.6		9.8		19.2	4.5		8.8		51.7	48.1	A	9.2	54	0.7	32.2	A	9.6		44.3	8.7	
9.8		39.7	28.4		9.8		49.2	27.7		9.3		59.5	11.3		9.8		16.1	35.1		9.8		50.4	20.3	
8.5		53.5	34.7		9.4	17	9.9	36.3		9.4	37	9.6	28.1		9.1		19.7	52.9		9.6	7	1.3	59.4	
9.2		55.5	48.4		8.3		46.7	59.1	B	9.0	38	1.1	44.9	B	9.8		21.0	2.7		10		12.0	48.0	
9.8	1	1.1	54.0		9.1		48.8	10.1		9.4		18.6	26.6		9.4		39.4	39.9		8.3		17.6	25.7	B
9.8		33.0	41.6		9.8	18	1.0	41.5		8.6		30.0	31.3	A	9.4		56.0	25.2		9.1		41.4	35.0	
9.3	2	4.2	42.2		9.5		12.7	33.5		9.3	39	38.3	21.9		10		58.2	53.2		9.4		45.5	42.5	
8.5		56.1	37.2	A	8.3		56.7	12.5	A	9.4		44.2	20.6		9.3		59.0	25.5	A	9.8		51.1	54.3	
9.5	3	1.5	32.4		9.7	19	5.6	27.7		9.6	40	20.6	26.7		9.0	55	7.3	55.9	A	10		52.8	47.6	
9.4		16.6	19.5		10		21.8	25.5		9.1		48.8	22.0		8.6		16.1	32.7	A	9.2		55.9	24.7	
8.7		18.1	21.9	A	8.0		29.8	57.0	B	9.4	41	0.6	28.0		7.3		20.7	46.5	B	9.9	8	25.4	17.5	
8.6	4	14.2	52.1	A	9.4		31.7	49.6		9.5		43.4	5.3		9.4		27.6	29.8		9.1		32.5	50.9	
10		29.2	27.5		8.5	20	1.1	44.0	A	9.3		43.5	46.0		9.4		48.2	43.4		9.4		36.9	4.2	A
9.9		35.3	55.9		9.8	21	26.8	42.0		9.7	42	7.4	39.5		9.5		50.4	54.8		9.8		46.7	7.4	
9.3	5	0.0	25.9		8.1	22	6.0	53.1	A	9.5		8.5	12.3		9.2		58.7	6.4		9.1	9	7.5	25.6	A
9.0		5.5	16.0		9.0		6.1	44.0	A	8.2		40.0	24.8	A	10	56	9.1	8.7		8.7		27.5	42.6	A
9.4		34.0	24.2		9.5		24.4	7.2		9.5		51.1	29.8	A	10		35.3	49.8		9.5		47.8	7.7	
8.8	6	2.3	45.5		9.4		26.5	26.1		8.8		51.3	23.1	A	9.4		37.7	43.0		7.2		49.4	14.0	A
8.3		17.8	59.2		9.5		27.5	10.5		8.3		59.2	44.3		9.8		56.4	10.2		9.2	10	48.2	27.1	
9.5		21.7	35.3		9.4		29.7	22.4	WC	9.3	44	10.5	59.4		8.9	57	14.7	42.2		9.6	11	40.1	26.7	
9.2		23.5	45.1		9.0		46.2	24.1	A	9.1		16.4	50.7		8.7		24.9	32.6		9.1		50.3	57.0	
9.7		24.3	36.4		10	23	45.9	2.7		9.7		31.9	34.8		9.1		42.5	33.8		9.2		51.0	37.8	
8.0		29.5	10.6	B	9.7		55.1	8.0		10		55.1	1.9		9.1		57.2	42.4		9.1		55.1	45.6	

801—860				861—920				921—980				981—1040				1041—1100			
	4h		−18°		4h		−18°		4h		−18°		4h—5h		−18°		5h		−18°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.7	12	5.6	42.1	8.5	26	1.1	2.7	A	7.7	40	26.5	40.1	A	9.0	56	7.3	40.8	A	9.6	10	46.3	22.4	
7.0		15.8	3.7	B	9.8		2.2	59.4		9.7		37.8	35.1		9.8		24.6	58.7		10	11	5.0	12.2	
7.0		32.4	12.4	B	9.6		4.8	53.1		9.4		47.9	53.1		9.4		51.5	1.4		9.4		12.9	10.7	
9.8		55.3	57.6		9.0		6.8	26.1		9.8	41	4.5	36.3		8.8	57	8.5	24.3		8.9		15.7	1.2	
10		55.9	9.7		9.5		48.3	17.5		9.5		41.9	25.4		9.8		11.6	28.6		8.0		16.4	49.4	
7.7	13	20.7	51.9		9.2		59.5	48.6		9.8		52.7	25.5		9.1		20.9	43.2		8.8		18.6	17.5	
9.4		21.9	44.3		9.7	27	6.6	53.3		8.6		53.4	30.7		9.4		22.7	11.6		8.9		37.8	30.0	
9.2		25.7	46.0		9.5		21.9	45.9		9.9	42	14.0	12.0		9.8		53.1	3.0		8.0		39.5	46.3	
9.9		30.4	27.0		7.7		27.8	29.5	B	9.1		43.6	38.2		9.5	58	10.4	56.1		9.9		52.4	5.8	
10	14	0.1	38.7		9.0		29.7	58.2		9.5		52.0	32.0		7.3		12.6	5.3	A	8.8	12	0.3	53.9	
8.1		4.9	5.0	B	10	28	10.6	59.2		10	43	5.7	42.8		8.4		16.2	8.7	A	6.3		24.6	17.4	B
9.5		9.0	13.1		9.1		18.1	1.9	A	9.1		49.3	49.2		9.8		35.0	48.5		9.4		27.9	24.8	
9.5		23.7	50.1		9.9		20.0	22.9		9.8		53.4	8.2		9.5		47.9	49.7		10		51.0	30.8	
9.4		26.8	3.2		9.8		21.3	12.6		10	44	21.9	57.2		9.3	59	9.1	23.7		9.2		51.0	9.0	
9.5	15	5.9	58.4		9.9		38.4	43.8		9.1		37.2	47.0	A	9.7		20.0	32.6		7.3		56.5	40.4	A
9.5		6.7	24.8		9.2	29	37.7	10.7	A	9.3		43.4	6.4		9.5		32.6	39.5		7.0		57.3	39.8	A
10		29.3	30.8		9.5		51.4	36.4		8.5		51.8	35.4	A	9.5		56.1	54.0		9.0		59.5	38.0	
9.8		30.4	59.9		9.1	30	3.7	28.9		9.2	45	6.9	58.6		9.8		58.3	55.0		9.8	13	4.9	10.0	
9.8		47.5	46.0		8.7		17.0	10.7	A	9.4		15.5	48.2		9.5		58.5	23.8		9.3		12.6	13.0	
9.5		49.6	52.9		9.0		17.2	39.8		9.5		22.9	1.3		9.0	0	12.6	30.5		9.4		17.5	13.2	
9.0	16	2.1	18.0	A	7.2	31	18.4	37.4	B	9.8		40.1	12.5		8.9		46.2	29.9		9.8		27.7	2.0	
9.9		15.3	52.9		9.1		37.4	20.4		9.8	46	5.1	59.0		9.8		55.2	51.5		10		47.7	10.0	
9.5		41.9	59.5		7.2		37.4	6.2	B	9.5		6.0	12.5		9.8		56.1	42.4		9.4		56.6	30.7	
10	17	8.5	31.5		10		53.3	45.9		9.8		8.4	25.7		9.0	1	9.3	12.4		10	15	5.7	16.9	
9.5		21.7	48.1		9.7	32	8.3	14.1		9.4		10.9	55.7	A	8.9		18.7	54.2		9.8		14.9	53.1	
9.4		24.7	43.9		8.5		17.8	57.5		9.4		32.7	2.4		9.9		18.8	1.8		9.1		34.6	58.7	A
9.5		31.3	25.6		9.2		58.8	42.8		9.2		33.7	20.8	A	9.4		34.0	44.6		9.2		41.0	8.1	
9.6		33.9	25.5		9.4	33	5.0	19.0		9.6		49.4	1.9		9.3		36.1	47.5		9.3		55.7	19.2	
8.9		40.3	52.2	A	10		13.5	41.0		8.3	47	7.9	3.9	B	9.8		57.2	5.0		8.8		58.6	15.8	
9.4		58.2	39.4		8.5		25.5	23.6		9.4		38.3	9.6		7.2	2	7.9	18.4	B	9.6	16	14.7	42.7	
9.7	18	29.3	15.3		9.0		44.7	34.8		9.1		41.8	20.6	A	8.5		34.9	5.5	A	9.3		30.6	11.1	
8.7		58.9	52.1	B	9.3		46.6	4.9		9.8		59.6	35.5		9.8		35.0	19.0		9.8		47.4	56.2	
9.6	19	10.4	2.9		10	34	12.1	49.5		9.4	48	30.2	35.0		9.4		43.3	9.2		9.1		58.5	58.4	
9.1		30.4	32.7		9.4		21.9	2.8		9.6		54.3	21.3		9.2	3	11.3	12.0		9.3	17	4.8	19.9	
7.7		31.8	11.9	B	9.4		44.1	32.9		9.0	49	8.9	48.4		9.5		47.0	44.1		9.5		20.0	32.9	
9.5		38.0	33.0		9.8		47.5	46.2		9.8		18.3	23.6		9.5	4	2.3	1.0		9.3		27.7	42.3	
9.8		54.6	10.5		9.3		49.5	19.8		9.8		24.1	14.6		9.3		2.8	20.9		9.5		48.1	37.3	
10	20	4.7	39.1		9.7	36	4.2	12.9		9.8	50	8.3	0.3		7.8		11.0	51.0	A	8.8		52.1	12.9	
8.2		22.8	42.5	B	9.5		15.3	43.2		7.5		37.3	20.4		9.6		13.2	39.4		9.5		59.8	50.8	
7.0		27.6	58.6	B	9.0		16.9	12.9	A	8.3		38.0	37.8		10		29.0	43.9		9.1	18	3.5	59.5	
9.0		39.6	10.1	B	10		18.2	30.6		8.7		47.9	47.0	A	9.6		34.1	46.5		9.8		14.9	0.2	
9.6		40.3	34.2		8.7		25.0	6.2	A	8.7	51	13.8	30.4		10		36.8	18.5		9.7		16.5	46.2	
9.7	21	5.5	8.6		8.8		25.1	14.2	A	9.4		16.6	12.5		8.9	5	25.6	26.1		9.8		27.9	13.2	
9.6		14.1	7.9		9.8	37	15.9	34.9		9.0		24.3	42.0		9.4		27.1	19.4		9.4		28.9	55.0	
8.4		19.9	25.5		9.3		32.8	53.6		9.2		28.3	43.8		9.2		27.7	36.3		8.3		44.8	51.5	A
8.5		20.6	4.9		6.0		43.9	56.2	A	7.0	52	19.2	1.9	B	9.5		48.9	25.0		9.6		49.9	28.6	
9.3		23.1	20.5		9.7	38	6.3	6.0		9.0		23.9	21.6		8.8	6	22.7	53.0		9.2	19	7.8	49.9	
7.3		29.5	9.6	B	10		10.1	51.6		9.0		32.3	22.3		9.1		24.5	34.8		9.5		9.3	20.0	
8.2	22	45.7	47.5	B	9.2		28.6	33.5		9.8		44.8	16.1		8.5		47.4	8.0		9.1		26.7	47.0	
10	23	12.2	38.6		8.6		42.2	26.0		9.7		51.9	38.7		9.0		49.6	20.3		9.4		39.7	33.3	
9.8		21.2	36.9		9.4		55.0	47.9		9.7	53	5.4	25.7		8.0	7	3.0	43.7	A	9.4	20	37.1	36.7	
10		39.3	16.3		9.5	39	9.4	57.2		10		15.8	19.9		9.4		20.7	22.3		9.7		42.8	54.2	
8.6		47.0	6.5	A	9.6		13.5	59.1		8.2		24.7	52.5	A	9.5	8	0.1	38.4		9.0	21	8.0	15.2	
9.8		48.4	38.6		10		34.9	12.3		9.4	54	51.6	2.0		9.6		2.4	12.7		9.5		30.3	15.5	
9.6		56.7	15.0		9.1		50.9	15.2		8.5		54.0	34.9		7.7		7.3	33.7	A	7.5		34.1	7.7	A
9.5	24	0.1	37.9		7.7		59.5	5.3	B	9.0	55	7.7	6.8		9.5		29.2	55.7		10		37.2	28.5	
9.0		30.8	16.3	A	9.7	40	7.1	9.1		9.8		17.5	20.3		9.5		33.4	35.2		9.0		46.9	47.1	
9.5	25	0.8	36.1		9.8		10.6	13.4		9.6		45.8	37.8		9.2	9	18.4	29.6		9.3		56.7	10.8	
9.8		28.5	49.3		9.4		14.7	30.4	A	9.1		55.9	48.4		9.5	10	0.3	40.4		9.8	22	7.0	23.9	
9.5		57.5	28.3		9.2		21.7	49.1		9.5	56	2.1	6.1		9.5		21.4	37.9		10		19.1	45.8	

1101—1160			1161—1220			1221—1280			1281—1340			1341—1400		
5h	−18°		5h	−18°		5h	−18°		5h—6h	−18°		6h	−18°	
m s	′		m m s	′		m m s	′		m m s	′		m m s	′	
22 46.9	36.7		9.4 35 38.0	29.2		9.8 46 56.6	11.4		9.8 56 35.7	21.2		10 7 9.3	33.8	
23 49.2	40.3	A	9.4 39.7	57.0		9.8 59.5	0.2		10 57 7.6	2.8		9.9 15.9	23.4	
24 1.3	42.8		9.8 50.9	23.6		9.5 47 4.9	19.6		9.5 11.4	52.5		9.0 24.3	43.4	A
12.0	56.4		9.1 53.0	1.7		9.3 7.8	19.0		9.3 13.3	40.1		9.0 27.5	24.1	
21.3	34.7		9.1 36 22.3	3.8	A	9.8 19.4	51.1		8.8 29.9	33.1		9.5 34.4	56.3	
21.5	43.2	A	8.3 29.2	25.8		9.0 28.2	10.7		9.4 41.3	39.0		9.5 36.5	51.8	
28.7	13.6		9.2 30.0	30.9		9.5 48 5.2	34.4		9.2 51.6	40.5		9.3 53.8	37.8	
30.4	23.5		9.0 37.5	0.1	A	8.5 21.5	53.4	A	9.3 59.5	24.8		9.1 8 4.1	45.2	
34.2	25.5		10 41.4	52.0		10 35.6	31.7		8.2 58 2.2	59.7	A	8.7 18.6	2.5	B
53.8	40.1		9.2 47.7	31.0		9.5 43.2	8.3		9.8 17.6	26.6		9.4 20.2	12.3	
25 13.7	13.6		9.8 48.6	52.4		9.5 45.7	12.1		7.5 27.7	4.5	B	9.8 41.2	10.6	
22.3	49.6	A	6.0 37 0.6	37.6	B	9.8 50.6	57.2		9.7 33.6	55.8		6.2 57.1	25.9	B
40.9	20.7		9.8 20.9	58.4		9.6 55.4	23.9		9.5 40.6	40.0		9.5 58.6	39.5	
45.4	18.2		7.2 42.8	21.3	A	9.9 49 6.2	23.2		9.7 46.5	23.0		9.4 9 0.3	15.5	
45.4	39.4		9.5 47.4	55.5		7.7 16.1	59.6	A	10 59 17.7	38.1		9.1 3.8	19.1	
26 19.8	3.7		9.0 49.1	8.4		8.7 21.8	1.9	B	10 18.5	35.0		9.0 4.5	27.4	
30.1	14.1		9.0 38 21.2	9.0		9.6 22.1	3.9		9.0 19.8	20.5		8.9 8.2	33.7	
33.9	33.5		10 22.2	43.7		9.8 54.3	11.2		9.5 42.3	37.6		9.4 18.9	43.7	
39.5	21.7		9.2 48.0	27.6		9.8 50 4.6	4.0		9.1 45.7	52.8	A	9.8 48.8	35.1	
52.9	40.1		9.5 39 33.6	5.4		7.8 24.9	18.6	B	9.1 46.6	39.2		9.5 59.2	7.7	
27 21.4	18.0		8.8 45.7	44.3	A	9.4 25.1	38.5		8.5 48.6	2.7	B	9.5 10 2.9	17.3	
22.9	46.8	A	9.0 59.9	22.5		9.3 29.5	21.7		9.0 48.6	2.1	B	9.4 5.4	30.3	
29.3	33.5		9.8 40 3.0	14.2		9.1 34.7	36.8		9.8 0 6.5	0.2		10 16.1	26.9	
29.4	29.5		9.3 28.0	26.5		9.9 43.0	26.2		9.6 48.9	21.6		9.0 28.6	24.2	
52.5	26.3	A	9.3 29.8	27.2		9.4 57.1	44.5		9.7 54.6	4.0		7.7 34.1	33.6	B
53.4	8.2		9.0 35.0	8.7	A	9.5 51 3.4	31.9		9.5 1 7.0	25.4		9.3 34.2	43.3	
56.2	54.7	A	8.2 46.3	13.7	A	7.0 11.6	4.5	A	9.8 12.7	25.4		9.4 42.6	47.7	
28 6.0	21.0		9.5 41 5.2	11.4		9.3 16.5	53.0		9.2 14.0	30.8		9.1 53.0	48.2	
35.1	33.3		9.1 11.2	31.1		8.9 19.3	46.1		9.3 28.1	23.2		9.8 59.8	33.0	
59.7	49.1		8.8 28.7	40.2	A	9.4 22.4	16.8		9.4 2 0.3	26.0		9.6 11 9.9	37.6	
29 12.6	28.3		9.8 32.9	48.5		10 28.8	14.2		9.4 1.4	33.5		9.8 13.7	10.0	
32.6	8.4		9.8 35.0	0.4		9.2 47.3	35.2		9.5 10.5	53.1		9.1 38.0	48.4	
38.6	30.3		9.0 51.2	13.1		9.0 51.4	48.0		9.8 22.6	2.0		9.0 47.1	30.6	
46.2	47.3		8.6 42 5.2	45.0	A	8.6 52.0	0.3	A	9.1 43.1	43.8		8.3 57.5	21.9	A
54.5	4.0		9.7 29.2	58.0		10 52 25.3	44.1		10 57.7	37.9		9.7 12 12.0	23.3	
30 0.3	50.7		8.5 44.1	6.5	A	10 35.2	13.8		6.4 58.1	6.6	A	9.1 26.3	38.4	
12.9	25.9		10 43 0.9	51.0		9.3 35.8	1.5		10 59.2	45.7		9.4 13 2.8	25.7	
22.0	0.5		9.8 2.4	33.7		9.2 53 9.3	39.6		8.2 3 0.5	28.2	A	9.2 29.8	30.0	
40.0	2.0		9.1 9.7	24.8		9.2 12.3	44.0		8.8 16.0	58.2	B	8.8 30.7	21.5	
44.5	40.3		10 14.8	6.9		9.4 19.0	53.9		9.3 23.7	54.5		9.8 34.5	34.6	
31 16.4	34.7		9.5 18.3	5.5		9.5 20.6	29.5		10 26.1	40.0		9.3 57.8	26.5	
28.3	38.5		9.7 20.5	54.8		8.9 37.4	30.5		9.6 38.5	31.7		9.2 58.2	34.3	
43.9	58.0		9.6 27.5	37.3		9.4 47.7	39.4		9.4 50.9	53.6		9.8 14 0.3	32.2	
52.2	48.1		9.0 34.5	43.0		10 54 13.4	5.3		9.9 59.3	15.0		9.4 8.7	3.7	
32 13.3	15.9		10 35.4	40.7		9.1 26.8	41.8		9.5 4 7.4	44.6		9.4 19.5	53.1	
14.8	28.3		8.7 47.1	19.8		9.4 30.5	24.6		9.8 7.7	8.3		9.8 26.9	18.2	
28.3	30.1		9.2 44 4.2	46.7	A	9.2 49.2	8.4		8.8 24.8	30.0		8.8 26.9	39.3	
33 0.4	25.7		9.4 25.4	31.5		9.5 52.9	22.3		9.6 25.6	39.7		9.0 28.2	7.5	
7.1	25.0		9.5 26.0	24.9		8.3 55 8.8	17.6	A	9.6 28.9	41.4		9.2 36.5	8.6	
20.3	48.0	A	9.8 27.9	13.4		8.0 22.1	3.9	A	10 53.7	11.2		9.0 15 15.8	12.9	
33.7	36.4		9.0 32.3	39.7		9.5 28.5	5.2		9.7 5 6.3	21.6		7.8 16.6	6.1	B
39.5	59.6		10 38.8	16.5		8.3 28.5	31.0	B	9.5 11.6	52.5		8.3 29.0	22.6	
34 4.9	0.6		9.1 40.9	46.5	A	9.5 41.4	54.5		9.2 19.4	40.1		8.8 30.1	1.2	
9.0	49.4	A	9.2 44.3	12.8		9.4 56.5	57.0		6.8 21.7	9.2		9.1 35.5	57.7	A
17.8	15.8		9.0 45 24.1	47.4		9.5 56 2.9	20.5		10 22.6	4.7		9.0 39.4	48.0	
27.6	27.8		9.4 42.3	47.3		8.0 3.7	34.2	A	8.8 37.2	33.8		9.2 48.5	57.9	A
46.4	54.1		9.5 43.2	9.4		9.6 5.1	26.0		9.1 6 6.5	58.5		9.5 16 3.4	37.2	
52.3	32.2	A	9.5 46 35.9	18.8		8.3 15.9	23.5	A	9.0 20.3	16.7		9.5 10.2	7.6	
35 17.2	12.9		9.0 46.6	4.7		9.0 22.4	9.2		9.5 49.0	53.7		9.7 28.6	25.7	
21.3	51.3		9.8 50.7	32.6		10 22.9	30.2		9.1 51.2	49.4	A	9.9 30.7	35.8	

1401—1460				1461—1520				1521—1580				1581—1640				1641—1700			
	6h	—18°			6h	—18°			6h	—18°			6h	—18°			6h—7h	—18°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.0	16 31.7	47.3		9.8	26 21.2	27.0		9.3	36 43.5	35.4		10	45 31.8	17.0		9.7	55 18.2	11.6	
10	32.7	20.4		9.4	47.2	10.7		8.8	51.7	4.4		9.0	42.7	28.3	A	9.1	23.1	34.5	
8.6	33.1	33.6		10	27 1.6	17.4		9.7	37 6.2	25.7		9.8	45.6	3.2		10	28.4	36.0	
8.3	50.8	9.0	A	10	2.2	26.8		9.0	18.8	2.5		9.8	46 1.4	29.5		9.0	36.1	8.0	
7.5	17 10.5	55.7	A	9.3	8.1	53.7		10	25.4	11.0		9.5	13.5	1.4		9.1	38.9	25.0	
10	19.4	15.8		9.3	12.6	2.8	A	9.2	30.0	43.6		9.4	15.5	54.0		10	56 6.5	45.5	
9.5	30.0	47.5		9.3	38.4	49.7		9.2	35.2	26.1		9.2	18.9	28.2	A	10	12.8	46.1	
9.0	18 7.5	57.6	A	8.2	28 11.3	41.8	B	8.6	49.0	15.5		9.5	37.7	16.5		9.1	18.6	7.5	
9.8	29.7	32.8		9.4	21.3	30.4		9.0	56.6	21.3		9.5	39.9	45.0		8.8	21.7	57.2	
9.8	43.6	3.1		9.2	21.6	3.9		9.5	38 9.0	15.3		8.7	47.2	49.5	A	8.3	35.6	7.5	
8.8	51.3	24.3	A	9.5	21.7	55.2		9.5	16.5	48.2		6.0	59.5	51.3	B	10	46.0	33.7	
9.3	51.3	13.6		9.3	29 9.5	57.7		9.5	19.5	48.2		9.5	59.9	21.4		9.8	48.4	21.9	
9.8	19 5.9	45.4		9.2	16.5	59.9		10	23.4	12.4		9.1	47 0.8	35.1	A	9.1	57 1.3	38.2	
9.1	6.3	10.0		8.8	17.2	23.1		7.3	24.1	54.0	A	6.8	1.4	45.0	A	10	4.1	5.5	
9.5	7.0	47.0		9.1	24.4	49.8		9.3	25.3	57.2	A	8.2	6.7	16.3	A	9.8	11.4	20.7	
9.5	11.3	12.4		8.8	29.8	11.9	A	9.0	26.3	5.1		8.7	38.9	22.6	A	9.0	21.5	49.6	
8.8	27.9	33.9	A	10	48.5	19.2		7.1	29.1	25.3		9.7	41.4	39.5		9.7	29.3	41.3	
9.2	30.7	28.9		8.0	30 1.3	32.7	P	7.2	47.3	7.2	A	9.0	46.1	6.7		9.7	31.9	43.4	
9.5	36.5	22.1		9.7	2.1	59.9		9.4	50.5	52.7		9.2	55.4	12.4		9.5	33.2	28.9	
9.4	38.2	31.2		6.5	2.2	32.6	S	9.0	39 4.1	54.4	A	9.1	48 4.6	13.4		9.5	41.3	52.8	
8.3	46.9	53.7	A	8.5	3.0	13.6	A	8.9	36.2	22.6	A	9.4	5.5	1.2		9.8	52.0	26.8	
9.9	20 0.6	24.1		9.6	8.4	56.5		8.7	46.2	21.6	A	9.5	18.0	49.3		9.8	58.4	21.3	
10	10.1	29.2		9.4	9.2	20.9		9.8	57.1	6.0		9.7	46.7	32.8		9.5	59.4	51.2	
8.5	10.9	9.0		9.8	16.5	57.6		9.8	40 2.5	27.4		10	49 13.0	27.1		9.0	58 5.7	1.2	
9.0	26.9	49.9	A	9.8	25.0	57.4		9.1	5.9	30.0	A	9.8	24.4	44.8		9.4	8.3	22.0	
9.5	47.8	47.9		9.3	53.1	49.3	A	8.8	6.4	28.2	A	8.4	26.7	16.5		9.5	13.3	22.2	
8.5	21 3.5	56.8	A	8.2	53.8	24.9		9.0	9.1	35.4		9.4	30.1	55.2		8.6	24.2	56.1	A
9.8	12.6	1.7		9.3	31 15.5	23.7		8.9	11.2	5.7		9.0	46.5	55.0		9.4	24.4	46.0	
9.7	48.0	24.0		9.7	21.2	54.3		9.2	15.6	56.6	A	9.6	48.0	16.9		9.5	34.5	58.1	
9.7	59.6	29.8		9.3	28.3	51.0		8.7	35.2	38.5	A	9.0	50 7.2	28.5		9.8	45.2	15.9	
9.3	22 17.3	11.0		9.3	28.5	50.3		9.7	38.5	34.4		9.1	17.4	25.8		9.8	46.9	10.8	
9.5	21.4	10.4		4.9	30.8	6.7	A	9.5	51.8	52.0		9.1	33.6	24.3		9.7	59 2.0	28.7	
9.2	36.0	58.3		10	53.4	5.8		9.2	41 8.4	3.8		9.0	53.1	3.2		9.1	9.4	56.1	
9.5	36.5	25.6		9.6	32 3.9	11.4		8.7	44.5	58.4	A	9.1	51 1.6	9.5		9.2	18.9	3.1	
9.9	37.5	23.8		8.6	13.8	14.2	A	9.4	45.6	35.7		9.1	34.9	22.4		8.5	20.1	17.7	A
8.9	46.9	49.7		9.7	25.1	20.3		9.1	49.0	58.5	A	9.7	37.4	21.8		9.5	21.2	27.8	
9.2	52.4	32.6		9.7	32.4	3.5		9.8	42 11.5	58.5		9.8	52 0.5	0.5		9.5	22.7	15.4	
10	23 10.6	0.7		7.8	40.7	3.6	A	9.6	13.5	30.7		9.1	7.2	0.1		8.9	22.7	44.1	
9.2	12.8	50.6		10	54.9	13.2		9.4	18.9	30.6		9.1	11.7	57.9		9.1	26.3	29.8	
9.4	14.2	33.0		9.3	59.3	7.4		10	37.8	23.6		9.1	19.5	29.8		9.0	28.0	30.4	A
10	19.1	30.2		9.5	33 14.1	49.8		9.4	44.4	47.6		9.2	20.0	34.4		9.0	43.8	29.4	A
9.8	23.8	32.7		9.4	49.7	18.4		9.0	52.9	9.4		9.4	27.6	12.1		9.4	44.0	11.6	
8.7	28.8	20.2		10	49.8	7.0		8.6	54.0	17.8	A	9.1	39.4	27.0		8.5	0 2.9	54.2	
8.7	28.9	25.0		8.0	55.6	58.1	A	9.0	57.3	15.1	A	9.5	42.7	16.0		9.5	10.7	19.2	
9.2	36.5	52.5		9.9	34 15.6	26.4		9.8	43 20.4	51.9		9.5	59.1	3.8		10	23.9	29.5	
9.8	37.2	44.5		9.8	28.8	2.4		9.8	29.8	25.0		9.0	53 5.9	40.2	A	9.8	33.4	12.6	
9.1	45.4	22.8		10	31.5	51.0		9.2	35.5	56.5		9.3	16.2	46.2		9.0	37.8	43.0	
10	24 2.7	10.5		9.5	43.0	41.2		9.7	36.7	28.2		9.5	40.9	20.4		10	55.4	3.9	
9.5	7.8	59.1		9.5	51.0	49.5		10	43.3	20.7		9.7	41.4	54.0		9.5	56.8	56.3	
9.7	8.5	19.6		9.3	58.3	33.4		9.2	47.4	27.3	A	9.5	42.4	35.0		9.7	1 3.0	5.2	
9.4	20.9	7.3		9.3	35 4.4	9.6		8.9	59.0	27.2	A	9.1	47.9	41.9		10	20.0	20.8	
9.9	21.4	26.5		9.4	25.8	5.2		9.5	44 14.6	3.5		9.8	54 17.5	47.5		9.5	20.2	22.3	
9.9	22.4	26.5		8.5	30.8	8.4		9.5	18.2	45.6		8.6	18.6	6.0	A	10	28.9	51.1	
9.5	30.7	35.3		9.4	33.1	58.4		9.2	21.3	15.1	A	9.4	35.0	29.3		8.9	45.2	33.2	
9.0	31.1	5.4		9.0	40.6	56.0		9.5	22.6	8.2		9.4	47.6	13.1		9.8	54.7	15.9	
9.5	25 5.2	9.6		9.1	57.0	54.4		9.8	34.7	11.0		9.1	49.5	25.1		8.5	57.8	47.7	
9.8	34.5	25.2		8.8	59.4	9.3		8.7	43.3	16.2	A	9.3	51.1	5.9	A	10	2 4.3	55.5	
9.3	41.3	14.5		8.8	36 1.3	57.7		7.5	47.4	50.5	B	9.6	55 4.1	50.2		8.0	5.2	22.2	B
9.8	48.5	10.4		9.1	29.8	2.1		9.8	45 9.5	31.2		9.8	6.1	7.8		9.6	5.9	35.4	
9.8	49.1	29.9		9.4	42.4	38.9		9.8	18.8	8.2		9.9	11.4	51.4		9.8	20.4	29.8	

1701—1760				1761—1820				1821—1880				1881—1940				1941—2000			
	7h	−18°			7h	−18°			7h	−18°			7h	−18°			7h	−18°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.5	2 20.7	2.5		9.4	10 16.3	3.1		9.5	17 46.5	10.2		9.5	24 55.9	9.8		9.1	32 2.4	10.0	
10	21.6	28.4		9.5	25.9	34.8	B	8.0	52.6	3.9	B	9.0	58.3	52.4		10	4.1	29.9	
9.0	31.2	17.3		9.3	36.4	12.2		9.0	18 18.8	44.3	A	9.5	25 6.6	15.9		9.3	11.7	44.8	
9.1	44.3	8.4		9.8	37.0	57.2		9.2	22.6	22.0		9.1	15.0	56.0		9.5	37.3	39.2	
7.5	3 13.5	52.9		9.4	42.1	53.4		7.0	27.7	43.7	A	9.4	18.4	24.3		9.4	37.9	28.7	
9.5	14.9	1.2		8.5	54.9	0.4		9.0	41.3	34.0		9.2	26.0	38.5		7.3	41.0	20.9	B
9.8	18.6	46.1		8.8	11 3.9	27.6	A	9.5	45.9	57.1		9.4	26.2	15.8		9.1	58.6	27.0	
9.1	25.3	35.9		8.1	9.7	32.4	A	9.5	56.0	9.5		9.8	34.1	35.7		9.5	59.1	29.0	
9.4	30.0	30.2		9.2	23.5	33.7	B	9.3	19 3.3	6.6		9.5	35.2	24.7		9.3	33 2.0	41.5	
9.8	39.1	18.9		9.4	27.0	30.5		9.5	20.4	9.3		9.8	39.0	15.3		9.3	6.0	40.1	
6.8	46.5	27.2	B	9.8	37.5	24.9		7.8	37.3	4.5	B	9.3	46.3	5.4		9.5	30.3	56.6	
9.8	47.3	22.1		9.8	39.8	22.0		9.3	45.9	53.4		9.8	50.0	59.3		9.0	33.5	43.7	
8.0	49.2	19.1	B	9.3	49.2	30.7	A	9.4	52.8	26.0		7.7	50.9	12.3	A	9.8	37.6	42.8	
7.4	50.9	57.9		10	12 6.1	9.9		9.9	55.8	48.3		9.2	57.5	34.6	A	9.8	42.3	12.2	
8.5	54.5	10.4		9.2	8.4	58.4		9.7	59.2	44.0		9.0	26 1.4	25.9	A	9.3	47.9	19.9	
9.6	4 7.7	5.1		9.5	14.9	57.6		9.9	59.5	55.9		9.3	7.2	52.6		9.8	52.2	6.1	
9.0	10.0	37.9		9.0	18.2	42.9	A	8.5	20 4.7	28.3		8.8	8.8	52.1	A	8.8	52.5	12.8	
9.4	28.6	54.9		10	26.3	26.2		9.5	27.3	30.0		9.5	11.5	54.3	A	8.4	55.8	29.8	B
9.8	40.9	31.0		9.7	48.9	55.5		9.5	30.9	47.2		9.5	15.3	43.7		9.5	34 7.7	55.7	
9.7	5 8.5	28.3		9.0	49.5	3.4		9.4	38.8	48.1		10	23.6	20.7		9.8	13.1	46.7	
10	11.7	59.7		10	54.4	13.9		10	46.7	25.7		8.7	24.4	12.6	A	9.5	20.5	23.5	
9.4	13.9	47.3		9.3	13 4.2	17.7		10	47.0	17.0		9.7	44.2	56.9		9.8	24.0	9.8	
9.5	16.5	59.4		9.2	6.2	29.5		9.3	48.8	48.3		10	53.2	15.3		9.5	28.8	17.6	
8.8	18.9	50.5		9.5	8.5	47.2		9.0	49.6	40.5		9.8	53.6	34.8		9.4	35.2	11.8	
9.8	29.6	29.1		10	14.9	2.7		9.5	21 6.9	52.3		9.0	27 10.7	45.7	A	8.7	47.7	51.6	A
8.2	45.8	14.6	A	8.7	18.3	25.1	A	7.6	9.9	12.2	A	9.2	11.6	53.7		9.8	48.3	15.4	
9.8	49.0	57.5		9.2	18.8	12.6		8.5	12.3	12.2	A	9.2	14.7	17.6		8.5	48.8	39.3	B
9.4	6 2.6	22.5		9.6	24.9	59.9		10	12.3	25.5		9.4	20.6	45.2		9.0	59.1	49.5	A
9.5	10.8	56.5		9.8	25.0	23.3		9.5	33.3	35.9		10	28.6	8.7		9.0	35 27.1	3.5	A
9.5	29.3	41.7		9.3	37.7	21.7	A	9.8	35.2	20.6		9.8	31.8	40.6		9.8	28.6	46.9	
8.6	44.4	48.9		9.5	54.7	9.2		7.5	42.3	49.8		10	32.9	7.1		9.4	32.4	23.7	
9.4	7 10.5	28.3	A	9.5	14 12.1	40.5		10	57.4	25.8		9.3	42.1	12.0		9.8	41.4	34.9	
9.1	15.7	24.0	A	8.6	13.9	3.1	B	9.1	58.3	33.9		9.8	56.7	15.4		9.8	42.9	35.3	
9.4	28.5	39.0		8.2	20.6	57.6	A	9.4	22 5.0	10.3		9.6	59.9	18.8		8.7	43.6	53.5	A
9.0	35.2	2.4	A	9.1	22.2	19.4	A	9.3	23.0	35.9		9.3	28 20.5	8.2		9.5	45.5	42.3	
9.5	42.6	33.9		9.8	23.5	24.8		9.1	32.7	29.7		9.8	21.0	18.3		7.8	55.3	45.9	A
9.5	44.1	12.8		9.8	36.8	0.2		9.1	36.4	10.9		9.4	27.7	32.1		9.5	57.1	5.0	
9.2	44.8	28.9	A	8.5	54.7	21.1	A	7.2	41.1	35.1	B	9.0	29.6	40.0	A	9.8	57.4	18.2	
9.0	46.0	44.2	B	10	15 8.4	2.2		9.2	46.0	35.2		9.5	32.4	57.5		9.8	36 7.4	6.5	
8.0	48.5	44.2	B	9.8	11.3	31.2		9.8	52.3	3.5		9.4	49.0	29.0		10	7.9	3.1	
9.3	56.5	44.3	B	10	12.2	56.4		10	55.8	29.0		8.7	50.7	35.1	A	9.1	23.1	3.8	B
9.4	56.8	45.8		8.9	15.5	44.6		9.3	23 7.5	12.9		9.1	29 21.3	14.5		9.0	24.6	19.9	
8.2	56.9	11.3	A	9.6	17.2	50.6		9.0	9.4	9.9		9.3	22.7	31.8		9.3	25.2	8.5	
9.1	8 35.4	41.9	A	9.8	32.4	4.3		9.2	13.1	56.3		9.8	29.7	59.0		9.2	34.0	35.9	
10	37.3	23.1		9.1	33.3	12.4	B	9.8	18.3	7.6		8.0	32.0	31.5	A	9.5	40.9	27.3	
9.5	52.5	2.8		6.0	50.2	44.4	A	9.7	46.8	33.6		9.0	30 5.0	28.7	A	9.7	53.6	21.6	
9.4	58.8	7.3		8.6	59.8	56.2		8.3	52.4	8.0		9.5	22.5	39.8		9.5	55.4	2.7	
9.2	58.9	11.3		9.5	16 4.4	43.7		10	24 4.5	59.5		8.7	23.6	38.0	A	9.8	37 4.3	19.0	
8.6	9 16.0	38.4	A	9.0	9.9	45.3	A	9.9	5.2	55.8		9.1	28.1	28.3	A	8.8	25.3	35.0	A
9.1	18.3	32.8	A	9.4	13.1	31.0		10	14.4	14.0		9.2	50.0	5.2		10	26.1	29.9	
9.5	23.6	50.0		9.5	18.2	15.8		9.4	15.6	28.2		9.1	52.8	29.6	A	9.5	27.2	58.6	
9.4	27.3	5.3		9.4	35.4	54.2		9.4	29.9	27.5		8.6	56.8	8.4	A	10	27.4	34.8	
8.9	30.4	34.9	A	9.4	48.9	22.9		9.0	34.5	38.1	A	9.5	31 9.3	53.8		9.0	31.3	15.2	A
9.4	32.7	34.6		9.3	53.5	12.8		9.8	37.9	52.0		9.5	16.6	1.0		9.5	33.0	26.0	
9.6	55.2	54.8		8.8	58.4	3.9	A	9.6	38.9	59.1		9.8	22.4	15.5		10	45.6	48.4	
9.7	58.3	2.6		10	17 5.7	21.8		9.8	39.9	16.1		9.3	26.0	17.7		9.5	48.6	48.4	
9.8	10 6.1	26.0		8.5	10.7	38.5	A	9.7	41.3	24.2		9.5	38.6	24.0		9.5	52.0	13.0	
8.9	6.3	57.7	A	9.1	29.1	19.6		9.3	43.4	30.7		10	39.4	3.6		9.8	38 3.6	51.8	
10	6.7	7.1		9.2	37.7	45.8		9.5	48.7	21.2		10	55.9	29.8		9.0	7.7	54.9	A
9.2	10.3	12.5		9.8	42.8	0.2		9.3	53.0	56.9		10	32 1.6	27.7		9.5	23.9	22.5	

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	7h	—18°			7h	—18°			7h—8h	—18°			8h	—18°			8h	—18°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.3	38 36.7	59.0		8.8	45 32.9	45.4	A	10	53 57.2	30.7		8.7	1 18.8	44.8	A	9.7	9 2.6	33.6	
9.3	37.1	7.5		10	43.6	14.0		9.8	57.7	7.3		9.5	22.5	57.6		8.7	10.2	27.0	A
8.8	51.1	21.0		9.8	57.9	50.9		10	54 0.3	4.6		9.1	23.0	39.9		7.5	31.1	58.1	B
9.0	58.5	42.2		9.3	59.7	22.0		9.4	2.4	1.5		9.1	24.9	48.4		9.3	36.9	44.9	
9.9	39 8.2	58.3		9.4	46 9.3	13.1		9.6	4.5	56.5		9.5	31.1	4.0		9.3	38.2	18.0	
8.5	15.3	5.0	B	9.8	36.0	50.1		9.6	34.9	34.7		9.0	2 3.3	53.3	A	9.6	58.4	20.9	
9.3	18.7	59.6		9.7	36.1	44.0		8.7	37.7	43.9	A	9.8	17.1	50.3		9.1	59.6	32.6	A
8.2	30.9	33.0	A	9.7	43.2	18.5		9.5	41.2	0.6		9.4	21.0	18.1		9.0	10 2.5	7.9	
9.0	31.6	48.7		9.5	44.2	9.6		9.4	42.5	48.0		9.3	24.8	35.4		10	3.6	19.5	
10	45.0	47.8		10	53.0	1.7		7.8	55 5.4	14.7	A	4.5	33.1	49.3	A	9.8	5.5	47.5	
9.8	54.7	57.0		10	47 14.1	13.9		9.4	15.0	34.4		9.1	36.2	26.1		8.7	21.9	43.1	A
9.5	54.8	24.6		9.1	15.3	33.2		9.4	17.6	38.1		9.8	43.0	27.9		9.3	23.0	47.9	
9.0	55.1	8.6	A	10	23.6	17.5		9.7	24.9	36.5		9.5	59.7	52.0		9.5	44.1	24.4	
9.8	58.2	11.0		10	48 2.3	0.4		8.9	27.0	6.4	A	9.4	3 5.4	23.4		9.5	55.8	24.4	
9.5	40 4.4	24.0		9.1	4.9	45.9		9.1	37.4	16.4	A	10	14.4	22.5		9.3	57.9	33.4	
9.8	8.1	49.5		9.8	23.4	6.0		9.5	54.2	34.4		9.5	31.9	36.6		8.8	11 1.2	20.4	
8.9	17.7	55.8		9.2	27.9	37.4		9.7	57.2	37.0		9.3	43.6	48.3		8.0	4.0	30.8	A
9.2	34.0	50.0		9.2	33.3	34.1		9.5	56 4.2	1.7		9.3	53.4	20.8		10	4.6	11.2	
9.3	36.5	30.0		9.8	42.2	51.5		9.4	7.2	42.8		9.3	56.5	37.0		9.8	8.4	37.5	
10	41 24.4	8.4		9.7	51.8	56.1		9.7	19.4	31.1		9.3	57.8	45.8		9.1	10.2	40.4	A
9.3	27.5	23.0		9.8	58.3	0.7		9.8	22.1	18.4		9.7	4 12.3	27.9		8.7	18.0	12.0	A
9.0	39.2	26.5		7.2	49 2.2	39.8	A	9.8	24.1	18.4		9.5	16.2	40.5		9.8	20.5	55.5	
8.5	41.7	58.5	A	9.6	4.9	49.1		9.4	28.1	56.3		9.7	18.2	25.3		9.6	28.8	28.0	
9.3	45.2	31.6		9.3	6.9	29.8		9.7	28.3	10.4		9.8	18.6	19.5		9.5	31.7	20.3	
9.3	57.1	9.2		8.7	9.8	42.9	A	9.5	40.0	21.2		9.6	28.6	25.6		9.4	36.0	23.0	
9.0	42 0.7	56.2		9.5	15.3	37.7		9.6	45.7	25.7		7.6	34.0	32.8	A	9.5	45.4	51.4	
9.5	3.7	53.2		9.4	25.9	2.7		8.3	49.2	10.8	A	9.4	52.9	37.7		9.4	48.3	48.9	
9.3	4.2	58.3		9.8	31.6	33.5		9.7	55.5	10.8		10	56.1	6.4		9.4	56.8	20.0	
7.7	18.0	49.2	A	9.5	45.6	48.1		9.4	57 10.5	35.5		10	5 12.1	6.8		9.6	12 6.0	37.8	
9.4	22.4	38.7		9.1	58.2	38.8		9.5	13.1	27.5		9.8	28.1	6.1		9.2	7.9	51.0	
9.5	27.9	0.8		10	50 1.0	12.9		9.0	24.2	52.2		9.5	31.7	55.2		9.2	9.4	34.2	A
9.5	36.0	44.4		9.3	7.9	30.3		9.5	27.3	0.0		9.4	32.4	19.5		9.9	13.2	24.7	
10	36.3	20.9		8.7	13.9	31.0	A	9.3	36.0	34.4		9.4	37.2	55.9		10	13.8	15.0	
9.8	41.8	5.0		10	18.2	17.6		8.7	38.6	57.7		9.6	41.8	32.2		10	17.1	7.9	
9.5	51.2	58.4		9.2	22.1	21.0		8.0	58 2.8	34.3	B	9.8	44.5	0.0		9.5	31.8	57.0	
9.4	52.0	47.4		9.5	35.5	57.9		9.8	3.1	1.0		8.8	57.7	56.1		9.3	37.3	36.2	A
9.2	43 3.1	28.8		9.5	36.1	45.8		9.6	4.5	20.2		9.3	6 9.1	9.5		8.0	43.4	0.6	A
9.5	5.0	46.7		10	41.6	3.6		10	29.7	11.6		9.5	10.0	52.7		9.6	46.7	31.0	
10	13.5	3.0		9.1	43.7	59.9		8.7	45.9	59.2		9.4	14.4	59.3		9.6	51.4	26.1	
8.5	19.3	38.4		9.5	51.0	20.6		9.3	48.0	21.7		9.8	21.3	24.9		9.8	13 1.9	47.9	
8.7	22.2	34.2		9.7	53.5	29.8		9.1	53.8	15.0		9.1	23.3	47.9		9.6	3.3	19.7	
9.7	24.3	13.1		9.5	51 10.0	56.0		8.8	54.6	0.4		9.3	27.7	51.3		9.5	5.9	42.3	
9.3	35.6	43.1		8.3	12.3	45.2	A	9.3	59.9	14.1		9.5	28.8	58.1		9.5	35.2	25.7	
9.1	40.2	14.8		10	20.1	21.5		9.8	59 12.2	2.9		9.2	30.5	39.1		9.3	53.3	55.8	
9.1	45.0	3.0		9.8	20.9	31.8		9.1	23.0	54.7		10	39.0	34.6		10	14 7.3	7.5	
9.4	45.6	51.4		9.7	23.7	16.4		9.5	37.6	35.8		9.3	41.9	48.7		9.5	8.8	15.4	
10	44 4.1	32.7		10	26.1	8.3		9.0	39.5	39.0		9.4	45.8	20.8		8.5	15.8	49.2	A
9.4	7.3	39.3		8.2	33.9	52.8	A	9.8	41.0	1.8		8.9	50.1	35.0		9.4	17.7	59.0	
8.2	10.2	34.6		9.2	58.3	42.7		9.5	45.0	19.2		8.2	7 1.8	25.5	A	9.9	22.0	25.9	
10	19.4	11.1		8.5	52 9.2	16.4		9.5	47.4	16.7		9.5	4.9	0.7		8.8	27.3	48.0	A
8.9	23.5	32.4		10	9.4	7.5		10	55.9	58.8		9.5	15.5	46.4		8.8	27.4	27.9	A
9.5	33.5	50.7		9.2	24.2	42.5		9.4	0 3.0	22.1		9.5	30.0	8.9		9.0	28.4	37.5	A
9.4	48.4	16.4		9.2	28.0	3.1		9.1	24.1	42.3		8.9	30.9	32.8	B	9.1	40.2	56.2	
9.7	53.4	18.6		8.2	38.9	56.8	A	9.3	25.1	58.2		9.5	39.0	13.5		9.4	45.3	55.8	
9.5	45 2.3	38.0		9.6	58.4	9.2		9.8	37.7	26.8		9.5	39.8	32.1		9.8	48.7	25.3	
9.0	6.1	58.1	A	9.3	53 4.8	19.5		9.4	39.6	31.6		10	8 11.5	9.6		9.9	49.5	27.5	
9.0	16.6	57.8	A	9.5	19.0	18.1		9.8	50.0	27.2		9.5	13.8	21.8		9.0	52.0	55.7	
9.5	23.5	47.5		5.3	21.9	0.2		10	56.7	8.3		9.1	19.6	34.7	A	9.4	15 11.8	51.1	
9.4	30.8	31.4		9.4	24.5	12.7		10	1 2.2	0.7		9.1	27.5	4.6		9.3	13.7	17.8	
9.7	31.7	30.2		9.9	45.8	2.6		9.1	12.1	45.7	A	9.0	36.2	56.9		9.2	16.2	22.0	

2301—2360					2361—2420					2421—2480					2481—2540					2541—2600				
	8h		—18°			8h		—18°			8h		—18°			8h		—18°			8h—9h		—18°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.3	15	29.8	48.8		9.8	22	36.6	58.7		9.8	31	10.9	54.3		8.6	40	57.7	10.6	A	10	53	25.1	13.1	
9.0		47.0	25.0	A	9.0		40.6	19.4		9.8		27.3	17.5		9.8		58.0	25.9		8.9		49.8	43.5	
9.6		50.3	13.7		9.8		57.0	29.9		9.8	32	0.3	4.5		9.4	41	11.1	57.7		9.1		52.6	59.3	
9.5		52.7	12.6		7.5		57.1	16.5	B	9.4		10.6	37.1		9.3		14.4	28.5		9.8	54	5.2	10.9	
9.6		56.3	10.9		9.8	23	7.6	14.0		9.1		21.8	12.4		9.4		31.2	32.7		9.1		22.6	30.1	
9.1	16	2.8	47.7		9.4		8.7	43.9		9.5		22.4	50.4		9.8		36.7	23.3		7.0		31.3	46.4	A
9.5		24.8	8.0		9.5		17.5	55.0		9.6		25.1	26.0		8.0		43.8	29.9	A	9.5		52.0	11.0	
9.0		31.2	15.4	A	9.5		19.7	36.9		9.4		45.4	1.6		8.9		59.2	52.2		9.4		53.4	35.8	
8.6		43.2	14.4	A	9.4		33.8	32.7		8.5		52.3	21.1	B	9.1	42	20.1	14.0		9.8	55	6.5	24.5	
8.2		46.5	29.3	A	8.8		51.0	56.8	A	9.7	33	0.5	32.9		9.2		26.3	2.4		9.5		7.7	0.2	
9.1		53.2	19.1		9.3		55.1	10.2		9.8		15.8	17.7		9.5		50.4	2.9		10		17.8	26.0	
9.1	17	1.9	38.5		9.1		56.6	46.5		9.3		24.4	52.5		9.0		55.8	19.0		9.8		33.9	1.7	
8.8		5.3	51.7		8.7	24	11.1	52.6	A	10		27.6	22.4		9.2	43	4.7	22.5		9.2	56	5.4	17.4	
9.8		12.4	31.2		9.3		21.5	35.0		9.3		28.9	54.3		9.8		5.4	4.2		9.1		6.1	21.0	
9.7		13.7	14.5		9.7		23.1	33.4		9.0		32.8	6.4		8.5		12.9	41.8	B	8.8		33.3	15.5	A
9.2		21.6	33.7		9.2		30.1	34.0		9.0		51.9	47.2	A	9.5		16.8	51.8		9.2		34.4	10.7	
9.1		22.3	6.4	A	9.0		41.9	3.1		8.5		55.8	56.4	A	8.8		18.9	40.7	B	9.1		36.7	49.3	
9.1		24.7	8.4	A	9.0		43.1	0.4	A	8.4		57.7	40.9		9.6		21.3	47.2		9.0		47.9	13.8	B
7.2		38.2	39.9	B	8.0		43.8	18.5		9.4		58.5	43.3		9.4		34.4	44.2		10	57	10.8	15.9	
9.2		49.8	35.6		9.4		50.0	9.5		9.0	34	12.1	4.2		9.2		41.8	16.1		10		20.9	25.0	
9.2	18	7.7	3.0		9.5	25	10.0	7.3		9.6		21.5	22.5		9.5		49.2	29.3		9.8		25.4	28.6	
10		8.4	23.4		9.0		36.6	42.4		9.4		27.2	30.3		9.8	44	34.2	19.9		9.8		26.0	35.0	
9.5		23.9	36.2		9.4		39.2	39.0		9.5		33.4	1.0		9.5		49.3	3.4		9.5		49.1	56.6	
8.5		25.2	16.8	B	9.4		46.4	20.5		9.1		42.0	35.7		9.4	45	10.4	37.0		9.6		56.8	12.4	
9.8		44.6	16.8		9.5		55.0	51.1		9.0		45.5	39.5		9.3		14.2	14.3		8.5	58	19.2	44.7	A
9.6		50.0	53.8		9.5		56.2	31.5		8.0		48.3	56.5	A	7.3		39.5	4.4	B	9.0		34.1	53.0	A
9.5		58.5	48.3		9.4		56.6	27.4		9.4	35	4.4	12.6		8.7		48.1	58.5	A	9.6	59	1.3	9.0	
9.4	19	2.9	24.9		9.0	26	6.5	5.0	A	9.8		9.3	8.4		10		59.2	3.5		9.4		14.3	39.1	
9.4		4.8	34.7		9.5		9.0	56.2		9.8		36.6	41.4		9.5	46	6.3	48.3		9.5		21.4	38.7	
9.3		4.9	30.3		9.3		10.4	31.4		9.8	36	0.7	7.6		9.5		28.2	53.9		8.5		28.2	45.2	A
8.5		19.3	41.5	A	9.0		21.2	36.1		9.3		3.9	53.5	A	9.3		29.2	6.1		9.5		29.1	37.1	
9.8		22.5	33.0		9.8		34.1	38.4		9.4		16.3	5.8		9.5	47	25.8	37.0		9.8		42.5	8.3	
9.1		28.7	51.1		9.0		44.4	21.2	A	9.5		22.2	20.3		9.4		33.6	54.4		8.6		49.3	42.2	
9.1		37.7	7.4		9.1	27	14.9	17.0	A	9.8		29.8	8.7		9.5		41.6	10.2		9.3	0	6.8	38.9	
9.4		51.1	56.2		9.8		25.0	1.8		9.3	37	12.3	28.2		8.0		42.1	18.9		9.5		16.7	20.0	
9.8		55.8	6.2		10		26.5	9.0		9.3		14.1	25.8		9.0	48	19.2	43.9		9.5		17.2	16.4	
9.1	20	0.2	50.6	A	8.8	28	8.3	28.4	A	9.2		18.4	42.9		7.8		22.6	15.7	B	9.6		55.0	54.0	
9.1		1.7	19.1		9.1		9.9	18.3	A	9.3		19.3	44.1		9.3		30.6	56.1		9.0		56.5	7.5	
9.5		1.8	45.4		9.0		10.7	19.1	A	9.5		26.3	2.9		9.8		34.7	46.3		9.7	1	19.6	9.8	
8.0		11.6	22.7		9.0		13.4	15.2	B	9.8		36.7	27.2		8.9		52.5	26.6	A	9.7		22.4	30.1	
9.1		11.8	41.7	A	9.0		22.9	16.5	A	9.6		46.6	21.9		9.4	49	5.8	40.5		9.7		24.0	33.4	
8.8		17.4	15.7		9.3		24.7	27.6	A	8.7		51.2	33.2		9.8		28.3	19.5		9.8		50.3	5.8	
9.5		17.7	58.6		10		41.4	55.7		9.5	38	5.7	25.6		9.5		32.3	35.6		8.9		55.0	52.9	
8.9		23.2	29.4		7.8		45.7	32.2	B	9.1		34.4	45.7		9.5		33.2	48.8		9.1	2	14.2	16.7	
9.1		34.3	43.8		9.4	29	0.9	2.9		9.8		40.6	22.8		9.1		52.6	56.8	A	9.1		24.7	27.1	
9.8		39.1	20.8		9.0		10.0	34.3		9.0		48.8	0.3		9.8		56.9	12.5		8.0		27.1	50.3	
9.6		44.8	58.7		10		14.4	26.6		9.4		54.0	26.3		8.2	50	8.0	54.8	B	9.0		38.7	7.5	A
9.5	21	16.1	12.1		9.0		21.4	16.1	A	9.8	39	20.9	19.5		8.3		59.8	34.9	A	9.6		41.4	34.5	
9.5		20.6	8.4		9.1		30.0	13.8	A	9.6		26.4	43.0		9.3	51	9.7	34.1		9.9		51.6	30.1	
9.6		26.1	28.1		9.7		41.4	15.1		8.0		38.8	37.9	A	7.0		12.2	19.4	A	9.4		52.1	8.5	
9.8		26.4	30.9		9.5		41.5	46.9		9.4		40.2	48.7		9.2		19.5	46.6		9.8		58.6	16.7	
9.4		28.6	13.4		9.5	30	1.4	16.0		9.3		44.7	3.2		9.2		31.2	35.7		8.7	3	3.7	27.4	A
9.4		44.1	57.5		9.5		3.5	4.2		9.4	40	6.8	19.5		9.5	52	21.9	2.6		10		8.2	13.4	
9.0		54.1	57.8		9.8		8.8	25.5		6.2		8.6	13.7	B	9.6		37.6	25.6		9.2		9.1	56.9	
9.4	22	1.7	40.0		9.4		11.7	33.3		9.4		10.8	44.7		9.8		59.8	10.0		9.5		10.2	12.0	
9.4		3.2	1.4		6.8		22.5	10.8	A	9.8		20.7	9.3		6.0	53	2.4	38.3	B	8.7		11.0	3.5	A
9.5		11.6	54.5		9.3		34.9	53.3		9.1		30.2	18.0		9.8		9.5	31.0		9.1		39.0	44.9	
10		14.2	22.7		9.8		36.3	25.0		8.3		40.6	17.9	A	9.6		10.2	40.3		9.8		55.5	15.4	
10		19.4	5.3		9.1		49.5	41.9		9.7		51.1	16.6		9.8		16.7	58.5		9.6	4	2.1	39.9	
9.4		19.8	7.3		9.7		55.1	33.8		9.4		57.4	7.2		9.7		18.9	52.4		9.5		2.8	44.1	

2601—2660

m	9h m	s	—18° ′	
9.5	4	14.4	53.0	
8.5		20.9	53.6	A
9.5		52.6	17.8	
9.7	5	11.7	9.7	
9.5		50.4	56.2	A
9.7		59.8	59.1	A
8.5	6	13.0	45.2	A
9.1		17.1	7.5	A
9.0		21.0	12.3	A
9.6	7	2.9	29.1	
9.5		3.4	23.8	
9.3		36.3	1.4	
8.5		40.1	4.5	A
9.5		45.0	42.7	
9.8		47.0	12.5	
9.3	8	12.5	24.3	
9.7		13.1	50.3	
7.2		34.2	59.7	A
10		46.8	24.8	
9.8		48.9	48.8	
10		52.0	36.2	
9.8	9	9.4	45.5	
9.5		10.4	28.3	
9.8		20.0	36.9	
9.2		23.2	55.9	A
9.1		37.9	43.8	A
9.5		40.5	1.5	
9.9		41.1	21.4	
7.0		44.8	50.9	A
9.8	10	3.4	38.8	
9.5		9.6	4.5	
9.2		15.4	30.8	
9.8		28.3	43.1	
10		42.4	13.9	
10		49.9	20.1	
8.5		57.2	57.0	
9.5	11	21.1	27.4	
8.8		25.5	38.2	
9.0		36.2	51.8	
9.8		58.3	41.4	
10		59.7	22.8	
9.4	12	11.3	44.1	
9.8		37.8	35.7	
9.8		45.2	20.8	
9.8	13	3.7	43.6	
9.3		11.5	19.2	
8.5		33.5	20.1	
9.9		35.6	57.9	
8.9		39.1	53.9	A
10		54.8	13.4	
9.1	14	3.6	58.7	
8.6		45.2	20.0	A
9.7		46.0	16.1	
9.5	15	15.0	20.8	
9.5		16.6	20.8	
9.3		22.5	55.7	
9.9		26.4	53.4	
9.6	16	8.9	30.1	
9.4		13.1	44.8	
8.5		36.1	48.4	

2661—2720

m	9h m	s	—18° ′	
9.5	16	44.0	55.4	
9.8		53.8	34.5	
9.3	17	8.3	2.7	
9.0		9.1	42.6	
9.1		16.2	27.2	
9.5		30.0	23.0	
9.8		30.5	14.4	
9.0		56.6	58.0	
10	18	8.7	57.3	
9.4		13.4	33.6	
9.5		56.6	40.7	
9.4		59.1	40.5	
9.4	19	10.5	3.3	
9.1		26.6	16.1	
9.4		29.8	59.6	
10		52.5	36.6	
9.5		53.6	11.2	
7.1	20	4.7	31.5	B
9.1		7.0	17.0	A
9.4		34.9	4.5	
9.0		39.7	30.8	B
9.7		40.5	22.5	
9.8		46.3	50.1	
9.8	21	17.2	42.5	
9.8		22.3	29.9	
9.3		32.4	21.9	
8.5		50.3	57.2	B
10		56.3	5.4	
9.7	22	26.4	1.8	
8.5		57.3	30.9	
9.5	23	10.1	45.8	
10		10.7	33.4	
9.1		14.8	52.1	A
9.1		16.5	1.2	A
9.1		21.3	9.2	
9.8		30.9	29.8	
8.0		31.9	56.0	A
9.0		42.7	58.1	A
9.4	24	1.3	27.5	
10		9.6	29.8	
10		22.0	8.7	
9.8		41.0	36.4	
9.5	25	0.4	25.3	
9.5		10.5	36.1	
9.6		15.6	30.1	
10		33.8	16.9	
8.7		34.2	49.3	B
6.2		35.8	45.6	B
9.7		55.3	38.7	
10	26	17.3	19.8	
9.5		22.9	5.9	
9.5		28.4	35.7	
9.5		29.6	56.6	
8.6		30.5	14.8	B
9.0		51.1	51.8	
9.8		54.0	23.5	
9.1	27	12.3	15.9	
9.0		13.5	21.1	
9.7		14.5	27.9	
8.8		19.7	27.9	

2721—2780

m	9h m	s	—18° ′	
9.0	27	25.3	23.2	
8.0		38.8	6.3	A
9.3		45.8	7.8	
9.0	28	5.5	44.7	A
9.5		32.3	35.2	
8.8		38.1	54.8	A
9.2		47.2	44.5	
6.7		49.0	56.2	A
9.2		53.1	56.4	
9.5	29	4.9	2.7	
9.1		12.7	14.7	
9.7		21.4	2.7	
9.2		55.6	21.0	B
9.5	30	2.2	22.8	
9.8		10.8	8.2	
10		22.1	47.1	
9.8		54.2	11.1	
9.8	31	1.3	32.1	
8.0		14.7	21.4	B
8.7		30.9	58.6	
8.2		31.3	20.1	B
9.1		32.2	0.8	A
10	32	11.4	18.0	
9.8		12.0	46.7	
10		22.8	36.5	
9.3		24.1	39.2	
9.5		25.0	48.7	
9.5		29.7	1.7	
9.9		40.6	29.2	
9.3		43.7	26.5	
8.3	33	2.4	53.7	B
9.0		4.6	16.9	A
9.8		25.7	52.3	
10		45.6	36.4	
10		49.1	32.8	
10		49.6	45.5	
10		50.5	24.2	
9.9	34	45.8	11.0	
9.3	35	11.9	22.7	
9.0		35.6	7.0	A
9.6		42.1	8.2	
9.1		47.4	47.8	
9.5	36	1.3	52.2	
9.0		18.3	51.8	
9.9		48.7	59.3	
9.8	37	16.8	46.0	
8.5		17.7	52.0	A
9.5		31.1	29.1	
9.8		49.9	21.8	
7.8	38	1.3	47.2	B
8.3		52.2	55.0	B
8.0		59.0	2.1	A
9.8	39	16.4	28.5	
9.5		23.9	17.2	
10		44.5	6.4	
9.3		52.8	21.1	
9.5		58.2	0.2	
9.5	40	18.1	38.0	
9.4		18.7	56.3	
10		29.7	31.5	

2781—2840

m	9h m	s	—18° ′	
9.5	40	33.4	2.2	
9.5		37.1	48.6	
10		39.0	23.4	
9.7		40.9	18.2	
9.1	41	4.7	46.8	
9.6		10.1	58.5	
8.5		15.8	15.0	B
10		33.3	42.5	
9.5		38.8	13.8	
9.3		39.9	33.2	
9.8		40.8	19.8	
7.2		58.3	38.4	B
10	42	17.2	14.9	
8.2		18.1	58.4	A
9.5	43	13.3	10.9	
9.9		48.8	34.0	
9.6	44	20.7	24.7	
9.4		32.2	35.0	
8.0		42.5	59.2	A
8.5		51.6	46.7	B
9.1	45	5.0	50.7	
9.5		40.6	26.2	
9.2		48.2	30.1	A
9.8	46	6.9	59.8	
10		26.9	56.2	
7.7		44.0	48.0	A
9.6		55.3	2.1	
9.8	47	41.4	51.3	
9.2		42.7	18.3	
5.5	48	1.8	19.5	B
9.2		36.6	9.3	
9.8		36.7	46.6	
9.2		50.5	21.8	
7.5		54.3	59.0	B
10	49	51.6	36.2	
9.4		58.5	14.7	
9.5	50	13.4	50.4	
9.3		14.6	33.1	
9.9		21.0	23.2	
9.5	51	45.1	32.7	
9.5		46.3	48.4	
9.5	52	52.6	27.1	
10	53	24.0	56.1	
9.7		32.3	21.8	
9.5		36.1	56.8	
9.8	54	2.0	3.6	
8.6		29.5	58.8	
9.5		34.6	18.4	
8.6	55	30.8	21.2	
9.2	56	25.5	26.6	
9.8		47.3	23.1	
9.0	57	3.3	11.0	
9.5		11.9	58.5	
9.0		26.5	44.7	A
8.5		33.6	42.9	A
9.4		37.5	26.0	
9.4		57.8	7.6	
10	58	2.3	9.8	
9.3		27.2	17.6	
9.8		42.8	2.9	

2841—2900

m	9h—10h m	s	—18° ′	
10	59	17.5	1.1	
10		18.5	5.1	
9.4		41.6	43.7	
8.3		45.4	36.1	B
9.7		59.8	57.2	
9.4	0	21.0	32.2	
9.6		22.1	20.6	
8.0	1	14.3	51.3	A
9.8		23.0	6.0	
10		24.2	15.6	
9.0		33.1	2.9	
9.8	2	26.9	25.5	
8.3	3	3.7	8.9	A
10		27.5	37.2	
9.2		48.1	14.5	
9.0		48.9	0.1	
9.5		52.8	46.9	
10	4	6.6	11.5	
9.8		7.4	29.7	
9.0		11.0	39.5	
7.0		24.7	14.5	B
9.3		33.1	9.1	
9.2		40.4	24.5	
9.7	5	9.4	32.9	
9.8		18.1	56.8	
8.2		22.7	50.4	A
9.4		28.6	31.5	
9.3		34.5	59.8	
9.0		41.9	39.0	
6.8		44.8	25.9	A
7.0	6	6.6	58.2	B
8.8		49.1	27.3	A
9.9	7	6.7	29.9	
9.5		12.4	23.7	
9.5		15.6	16.1	
9.8		29.3	36.4	
9.5		49.0	58.6	
9.1	8	9.7	46.0	
8.3		39.4	12.8	A
9.6		59.8	37.6	
9.5	9	9.2	7.1	
9.5		11.8	51.7	
9.0		21.0	56.6	
9.8		25.3	12.8	
7.0		36.7	35.0	A
9.5		53.7	35.9	
10		53.8	19.3	
9.8	10	16.5	8.1	
8.7		35.6	46.4	B
8.8		58.5	14.2	A
10	11	28.6	30.2	
9.4		46.1	29.1	
9.4	12	23.8	6.8	
8.4		26.8	3.7	A
10		39.2	47.5	
10		57.7	25.6	
9.6	13	7.5	12.6	
10		20.2	49.8	
9.1		24.1	25.2	
8.4		31.8	13.7	A

2901—2960				2961—3020				3021—3080				3081—3140				3141—3200			
	10h	−18°			10h	−18°			10h	−18°			10h—11h	−18°			11h	−18°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.1	13 41.0	4.2		9.5	25 44.3	12.8		9.8	38 54.8	49.1		9.2	54 9.5	46.2		7.0	8 6.9	50.5	A
7.7	50.3	19.0	A	9.1	49.0	23.3		7.0	39 26.6	59.9	B	9.5	18.7	3.0		8.8	14.8	38.9	
10	14 11.0	49.8		10	57.3	14.4		7.0	28.2	6.2		10	35.2	18.0		8.7	57.8	48.5	A
10	38.1	52.4		10	59.3	38.0		9.8	29.5	41.0		10	48.9	45.8		9.7	9 28.9	31.2	
9.1	56.4	42.7		9.5	26 4.1	43.4		8.8	38.6	57.1	A	9.5	56.4	39.7		10	58.5	55.8	
9.4	56.7	13.5		9.1	24.3	7.9		9.8	40 1.3	24.7		9.8	55 11.9	41.7		9.5	10 0.0	37.7	
10	15 2.5	42.6		9.5	38.6	43.0		9.0	9.2	17.5		9.0	46.4	55.9	A	8.6	13.6	1.7	A
9.7	3.6	16.5		10	40.2	9.2		9.3	20.0	38.5		9.5	56 2.7	6.1		9.5	32.4	25.0	
9.2	8.1	51.5		9.1	45.2	27.8		9.8	41 12.1	25.6		9.3	4.4	44.9		9.5	33.1	20.0	
9.2	16.1	44.2		9.8	27 35.5	40.7		9.6	14.2	21.9		10	39.1	39.5		9.5	54.8	10.6	
9.7	37.7	5.0		9.4	51.8	17.0		8.6	17.5	27.7		9.5	39.8	34.1		9.1	11 16.8	27.0	
9.7	42.6	15.9		10	55.7	16.1		10	26.5	53.9		9.5	41.3	32.9		9.5	12 1.5	2.8	
9.8	48.6	12.2		9.8	28 13.8	32.2		9.0	40.5	51.5	A	6.5	46.3	52.0	A	9.7	48.5	39.8	
8.3	49.2	42.0	A	10	14.4	22.2		9.3	42 14.7	45.0		10	54.2	13.7		7.5	57.9	46.9	B
9.2	16 1.3	31.6	A	9.7	16.3	15.2		9.3	14.9	49.2		9.3	57 10.4	30.6		9.4	13 5.3	46.1	
9.4	11.2	7.8		9.3	46.5	55.4		9.5	55.5	31.5		9.0	19.3	52.7	A	8.5	12.0	7.3	
9.0	14.1	59.4		9.3	50.5	51.1		9.8	43 15.6	2.7		9.3	33.1	13.4		8.9	39.4	29.6	
10	38.0	48.5		9.5	51.5	57.5		9.4	23.6	10.7		9.4	47.3	44.1		9.5	52.3	44.3	
9.4	42.9	39.8		9.1	29 5.1	14.9		9.7	35.1	10.7		9.8	58 44.6	13.2		9.0	14 24.5	10.5	A
9.4	55.8	14.0		9.0	30 9.4	13.5		9.4	44 2.9	56.1		9.8	45.5	30.7		9.5	26.8	48.6	
9.3	58.7	4.4		9.3	16.5	47.2		10	7.2	40.5		9.1	51.1	17.8		9.8	15 6.0	28.7	
10	17 9.8	21.7		8.3	32.4	36.3	A	9.0	7.2	20.5		9.5	59 5.0	0.4		9.2	18.9	6.1	
9.1	14.4	41.0	A	9.5	38.9	53.0		9.0	11.6	11.9		8.8	19.8	0.4	A	9.8	56.7	14.5	
9.8	19.7	13.9		9.3	45.2	23.1		8.3	45 17.5	7.3		9.3	39.6	5.2	A	9.2	16 5.5	19.2	
9.8	23.5	42.0		9.2	31 25.9	59.5		9.5	29.8	34.7		9.5	52.7	37.9		9.8	6.4	10.5	
9.4	25.5	30.7		9.7	34.5	6.3		8.9	31.3	36.0		9.5	0 20.2	30.5		9.5	39.9	2.6	
8.0	39.1	21.7	A	8.9	35.7	52.8		9.7	46.0	8.1		9.5	26.0	1.9		8.5	55.4	10.9	A
9.1	18 16.7	18.1		10	36.4	41.6		7.5	48.3	47.5		9.3	44.8	25.7		10	17 6.1	38.5	
9.4	24.8	21.5		8.3	49.9	50.8		9.8	46 7.7	53.4		9.0	1 33.1	25.4		9.0	27.2	41.8	A
7.5	39.0	51.8	A	8.8	51.7	22.1		8.8	31.1	21.9	A	6.3	48.1	37.7	A	9.8	28.9	19.6	
9.5	47.6	31.8		9.5	57.1	8.0		9.0	38.2	39.4		9.8	55.5	12.5		9.5	47.5	40.3	
9.6	19 20.0	26.4		9.2	32 8.4	58.6		9.5	56.0	26.0		9.1	59.1	43.0	A	9.0	18 57.6	17.0	
9.5	31.4	59.4		9.5	9.9	55.7		9.0	47 11.2	25.1	A	8.6	59.9	4.2	A	9.5	19 12.5	37.9	
9.4	47.2	33.9		10	32.3	55.7		9.5	19.8	55.2		9.3	2 16.4	13.0		9.0	26.8	16.6	A
9.4	20 13.4	45.5		8.6	33 12.2	2.0		9.8	35.7	37.2		9.5	22.1	47.7		9.7	33.2	24.9	
8.9	44.1	30.1		9.7	23.0	35.4		8.7	47.3	33.1	A	10	36.5	21.8		9.8	39.4	37.5	
8.8	47.1	20.3		8.7	32.3	50.5	A	10	50.1	20.8		9.7	54.9	3.7		9.0	47.0	39.2	A
8.3	54.5	18.7	A	9.9	50.8	47.6		10	48 12.9	8.3		9.8	57.9	29.2		6.9	47.0	24.0	A
9.2	21 0.0	27.0		9.5	53.6	16.9	-	9.5	37.7	35.0	A	10	3 46.4	10.3		10	20 28.7	9.8	
9.6	13.6	17.1		9.5	34 17.2	40.6		9.4	49 1.7	41.6		9.9	49.3	15.3		9.1	42.8	27.5	A
9.1	26.5	19.6		9.1	40.3	50.5		8.6	7.2	44.7	A	9.5	4 17.0	40.8		9.1	44.2	16.5	
9.4	33.3	58.5		9.5	51.9	30.0		10	38.6	52.1		9.8	22.8	46.8		8.7	53.7	3.7	A
6.5	38.3	46.9	A	9.2	53.2	36.2		9.5	39.0	1.1		9.4	33.4	8.5		10	21 30.9	40.5	
9.5	58.8	42.6		9.4	35 13.3	47.4		9.8	50 0.8	10.7		9.8	48.5	58.4		8.8	48.6	59.7	
9.9	22 12.2	39.0		9.6	28.2	46.8		9.1	32.9	25.5	A	10	51.4	23.7		9.8	22 23.5	55.6	
9.2	24.1	34.8		9.7	53.2	31.0		10	44.8	10.9		9.6	5 2.3	1.4		9.4	28.7	25.3	
9.0	25.7	40.6		9.6	36 20.8	1.2		9.0	47.1	57.7		8.8	25.3	11.6		9.4	34.9	48.9	
9.7	34.6	20.9		8.0	25.8	6.4	A	9.5	49.8	13.2		8.3	27.7	53.9		9.5	57.9	47.8	
8.3	54.4	11.8	A	9.5	44.9	17.3		8.8	51 8.6	35.5	A	10	6 13.4	40.0		9.6	59.0	31.7	
9.5	58.5	8.7		9.3	45.7	33.7		9.8	20.6	48.5		9.5	18.3	19.5		9.4	23 5.9	53.8	
10	23 8.4	9.9		9.3	54.3	6.2		9.3	39.2	6.4		9.0	52.5	46.8		9.4	19.9	52.0	
9.5	20.0	2.4		9.4	37 11.6	10.4		6.8	49.5	49.5	B	9.7	53.6	58.1		9.8	35.6	2.4	
9.5	30.4	18.0		7.5	17.5	22.5	A	9.3	58.4	44.5		8.6	7 18.4	44.5		9.1	24 0.2	19.4	
8.2	24 1.9	11.9		9.3	40.6	40.6		8.7	52 9.5	42.3	B	9.4	31.9	41.4		9.2	15.1	11.8	
9.2	41.5	20.7		10	41.0	21.0		9.5	32.4	2.6		8.5	44.9	0.4	A	9.5	51.0	11.8	
8.9	56.5	23.2		9.2	38 15.2	59.1		9.7	54.5	31.6		9.8	48.8	40.6		9.7	25 8.3	46.0	
9.0	25 10.7	54.7		8.5	16.7	56.2	A	9.4	53 8.3	50.0		8.3	54.9	48.6	A	10	21.3	44.6	
9.8	16.4	20.3		8.8	48.7	56.6	A	8.8	8.4	12.4		9.5	55.7	12.4		8.5	23.0	4.1	A
8.3	22.9	18.2	B	9.8	50.7	20.2		7.1	32.0	34.1	B	9.4	8 0.9	55.9		9.8	25.1	16.8	
8.2	43.4	27.2	B	8.4	52.4	53.0	A	9.2	53.1	33.4		9.4	5.3	2.5		9.4	54.2	34.9	

3201—3260

m	11h m s	−18° ′	
9.4	25 57.8	41.6	
9.8	27 57.9	6.1	
8.9	28 13.7	43.9	
9.3	42.6	50.6	
9.8	53.4	31.0	
9.8	29 2.4	11.0	
9.5	8.8	30.9	
8.9	24.9	10.3	A
8.8	31.8	28.4	A
9.8	57.4	23.1	
10	30 5.1	36.8	
9.1	51.8	57.2	A
9.4	53.0	6.8	
8.5	56.8	34.7	A
8.8	57.1	7.4	
9.7	31 19.5	45.5	
9.8	28.8	13.7	
8.9	32 22.0	43.1	A
9.0	33.7	18.4	
9.5	33 6.9	49.5	
8.5	9.6	39.5	B
9.5	34 15.0	47.5	
8.4	37.9	38.4	
9.5	45.2	1.6	
9.7	45.4	53.8	
9.4	35 57.4	46.5	
9.3	36 53.5	12.1	
9.9	37 17.7	49.7	
9.0	46.4	5.2	
9.8	38 13.6	33.2	
10	20.0	20.8	
10	42.2	17.3	
10	52.6	8.9	
9.2	39 2.9	2.8	
8.7	18.5	12.1	A
9.5	19.3	43.4	
8.0	23.1	40.0	B
10	23.8	51.9	
9.2	32.4	6.5	A
9.0	40 4.3	7.9	A
8.0	7.4	23.1	A
8.4	25.3	35.5	B
8.8	25.5	41.4	
8.9	41 45.4	17.0	A
9.6	42 1.2	49.2	
9.7	11.5	49.5	
8.8	12.1	22.9	A
10	22.7	3.0	
10	27.8	24.4	
7.8	55.0	48.0	A
9.8	43 1.7	5.5	
8.9	6.6	52.8	A
9.5	8.5	18.1	
9.9	18.3	57.9	
9.6	45.5	23.6	
9.1	45.8	9.2	
9.7	46.7	26.1	
8.9	52.2	10.2	
9.2	44 2.7	9.3	
8.5	16.5	22.0	B

3261—3320

m	11h m s	−18° ′	
10	44 20.9	35.9	
9.4	23.4	4.4	
9.9	26.6	2.9	
9.5	35.7	13.3	
7.5	50.7	23.8	A
9.5	45 17.4	27.8	
10	18.8	46.0	
8.2	20.3	22.6	A
8.5	32.5	53.8	A
9.5	46 31.3	57.5	
10	45.1	11.0	
9.8	45.9	13.6	
9.8	47 29.5	44.0	
9.5	44.5	3.7	
9.6	59.8	50.1	
9.7	48 22.8	57.0	
8.5	49 17.7	58.8	
9.8	34.6	44.0	
10	37.0	28.7	
10	37.3	39.3	
9.3	51.0	24.6	
10	53.9	2.4	
9.4	57.7	50.4	
9.4	50 25.2	51.7	
7.7	28.7	10.4	B
9.6	34.1	31.8	
9.1	43.3	23.5	
10	59.6	49.0	
10	51 33.0	29.5	
9.2	52 16.3	5.2	A
9.5	21.4	58.3	
9.5	47.5	23.7	
10	53 2.5	44.6	
9.7	4.5	28.4	
5.7	26.5	51.1	A
9.3	48.9	29.8	
9.2	54 2.0	52.1	A
9.2	9.7	35.9	A
8.8	15.4	31.7	A
9.3	34.3	13.6	
9.7	51.2	28.1	
9.5	55 1.6	29.0	
9.0	15.9	50.1	
9.4	30.3	19.5	
9.2	34.9	24.7	A
10	51.7	35.1	
10	56 3.4	1.7	
9.9	5.3	22.0	
9.0	6.3	29.4	A
9.4	40.2	19.6	A
9.5	57 0.2	21.5	A
9.5	21.1	51.9	
8.9	29.8	45.4	
9.0	31.5	34.1	
9.5	50.9	31.3	
9.5	58 9.8	42.6	
10	15.6	2.6	
10	21.9	52.8	
9.4	25.1	3.2	
10	35.3	32.2	

3321—3380

m	11h—12h m s	−18° ′	
9.1	58 47.1	5.4	
10	52.3	59.2	
10	59.1	11.2	
8.9	59 35.2	43.3	
10	54.0	54.5	
10	56.5	48.4	
9.4	0 25.1	27.0	
9.0	42.8	59.8	
9.5	53.6	14.4	
9.5	56.4	29.6	
8.8	1 2.0	16.1	
9.3	20.1	23.8	
9.8	34.2	45.0	
9.5	2 2.5	7.1	
9.8	11.9	7.5	
9.5	36.6	31.3	
7.7	50.2	57.6	A
9.7	56.6	44.7	
10	3 0.0	36.0	
9.4	0.8	44.7	
9.8	44.9	11.0	
9.7	50.0	40.4	
9.4	57.8	56.3	A
9.8	57.9	0.1	
9.5	4 4.4	17.0	
10	34.5	56.5	
9.8	48.9	12.8	
9.8	5 5.8	45.4	
9.6	34.9	25.0	
10	37.8	7.5	
8.0	6 47.9	20.7	A
9.9	7 34.9	58.8	
9.2	39.8	28.1	
8.8	48.4	35.0	
8.5	8 16.7	4.3	A
9.6	22.1	31.3	
9.1	28.4	32.7	
10	45.8	58.1	
10	9 49.1	30.1	
8.9	50.4	31.3	
9.8	54.6	1.0	
9.0	10 33.5	5.7	
9.8	11 7.8	4.4	
9.4	14.3	28.1	
9.0	58.1	7.0	
9.9	12 4.0	26.8	
var	8.4	27.0	A
7.8	13.7	23.6	A
8.3	25.6	28.5	B
9.5	28.5	6.0	
10	49.1	19.1	
9.3	49.6	29.9	
9.1	13 29.1	23.9	
10	14 19.6	47.2	
9.5	19.8	24.0	
9.5	21.3	0.9	
10	15 25.4	9.3	
9.0	47.5	17.3	
7.0	16 21.8	25.4	B
7.0	31.0	45.9	B

3381—3440

m	12h m s	−18° ′	
9.3	16 32.5	44.2	
8.8	17 21.4	44.6	
9.3	33.2	23.2	
9.4	36.0	59.2	
10	36.4	3.0	
9.6	49.0	19.4	
9.7	56.8	7.9	
7.1	57.3	33.2	B
9.8	18 26.4	26.0	
9.1	33.7	25.2	
9.3	36.6	38.9	
9.8	37.1	17.7	
7.8	59.7	30.6	B
10	20 21.5	28.7	
10	24.7	11.3	
9.9	28.7	11.3	
8.5	44.8	14.6	A
9.3	45.3	46.7	A
9.9	21 23.8	34.7	
9.8	22 1.2	19.5	
9.5	18.2	39.4	
9.8	24.1	11.7	
9.0	50.2	14.9	
9.3	23 27.6	20.2	
9.1	30.2	47.6	
7.5	36.2	47.6	B
8.8	39.6	11.7	A
9.7	51.4	31.0	
9.6	24 2.1	25.5	
10	21.7	49.1	
9.6	43.5	7.7	
9.6	47.0	16.4	
9.1	53.2	57.6	
8.9	53.7	9.0	A
9.6	25 18.3	13.5	
6.2	48.2	59.4	A
9.5	54.1	51.6	
10	26 15.0	49.1	
9.8	41.7	59.6	
9.6	51.5	19.0	A
9.8	56.4	7.0	
10	27 52.3	2.0	
9.8	28 5.3	0.5	
9.0	21.9	45.8	
9.5	22.9	7.2	
9.3	25.6	33.7	
8.5	41.2	5.4	
8.5	29 9.9	12.0	A
10	27.8	47.7	
9.7	37.9	19.8	
8.5	30 5.9	46.6	A
9.4	32.9	52.1	
9.3	31 9.8	39.0	
8.2	32.0	54.3	A
8.0	53.1	26.7	B
8.7	58.3	42.1	A
8.7	32 38.6	0.2	A
9.0	50.7	20.3	A
8.2	33 7.8	56.0	B
9.8	34 0.2	45.7	

3441—3500

m	12h m s	−18° ′	
9.4	34 13.2	39.9	
6.2	14.8	57.7	
9.8	20.6	6.4	
9.4	26.2	19.8	
9.5	39.1	2.4	
9.7	57.6	10.7	
9.0	35 3.7	42.8	
9.0	8.3	4.4	
9.7	8.6	30.9	
10	28.2	54.4	
8.7	43.6	23.9	
8.2	55.5	4.2	
9.0	36 21.6	7.8	
8.6	23.6	16.2	
10	42.0	6.2	
9.3	37 28.1	43.6	
9.3	55.9	5.2	
9.4	38 40.5	16.8	
9.5	51.0	21.2	
10	52.9	25.8	
9.5	59.4	8.7	
9.1	39 5.0	13.7	
10	21.3	21.9	
8.9	35.5	51.8	
6.3	44.0	12.7	
8.9	55.9	9.6	
9.7	40 9.0	16.5	
9.7	11.3	4.2	
8.8	28.1	57.5	
10	38.4	21.4	
9.3	41 5.4	43.1	
8.2	10.9	52.0	
9.2	23.9	46.4	
9.9	59.3	36.0	
10	42 22.0	54.0	
10	26.4	16.5	
9.0	52.2	5.9	
9.3	43 14.6	31.6	
10	37.6	26.0	
9.8	51.5	32.4	
9.8	44 5.2	2.5	
9.1	6.9	30.1	
8.5	15.7	9.4	
9.8	18.3	15.7	
9.7	45 19.5	29.2	
9.8	28.2	40.2	
9.8	46 13.3	40.1	
9.5	17.6	4.8	
9.1	41.2	20.5	
9.5	54.2	11.3	
9.8	47 1.6	40.7	
9.0	14.1	36.7	
8.8	26.7	40.7	
8.8	48.7	20.7	
9.9	58.6	2.8	
10	48 2.9	29.4	
7.3	37.3	50.7	
9.5	48.9	4.5	
9.4	50.7	59.0	
9.2	49 0.1	16.1	

3367: roth

3497: $37^{s}.18\ 50'44''.4\ B_2$, Ep. 1885.33

3501—3560

m	12h—13h m	s	−18° ′	
10	49	27.6	22.0	
9.4		35.9	0.9	
9.2		45.7	56.2	A
8.2		54.6	57.9	A
10		58.1	12.3	
9.4	50	1.2	56.1	A
9.8		4.5	18.6	
8.6		15.2	24.0	A
9.5		35.4	6.0	
10		41.5	21.0	
9.6		47.9	30.7	
9.4		55.0	41.9	
10	51	11.0	11.9	
10		19.6	27.5	
9.7		51.9	46.5	
8.9	52	2.4	41.0	
9.8		4.5	46.8	
8.3		31.4	41.7	A
9.4		45.4	51.3	
9.8		48.4	50.8	
9.8		54.3	6.8	
9.7	53	7.2	28.1	
9.5		15.3	4.9	
9.8		44.5	34.5	
9.3		48.4	7.9	
10		55.4	41.8	
9.8		56.7	55.9	
7.8	54	11.0	59.5	B
9.5		15.3	39.8	
9.5		50.8	45.2	
9.6		59.3	40.4	
9.1	55	20.9	12.0	
7.8		21.6	17.5	A
8.8		45.4	53.8	A
9.6	56	19.1	29.5	
9.5		54.8	21.0	
9.4	57	31.2	38.2	
8.0		45.7	11.8	
8.0	58	4.6	3.0	
8.0		43.1	10.3	A
9.3		52.6	34.1	
8.9	59	35.0	41.8	
7.5	0	8.1	15.4	A
9.2		21.6	14.8	
9.6		54.1	33.8	
9.0	1	25.0	58.2	A
8.5	2	25.0	7.7	B
9.0		47.4	58.4	
9.4		54.5	14.6	
9.1	3	5.8	15.4	
10		8.6	28.4	
9.0		13.9	43.5	
8.7		25.4	2.2	A
9.3		46.7	31.9	A
9.4		47.8	33.9	
9.4	4	18.9	48.0	
9.3		48.9	3.0	
9.1		55.8	2.6	
9.1		57.3	40.5	A
9.0	5	5.9	11.6	

3561—3620

m	13h m	s	−18° ′	
9.3	5	31.0	59.2	A
6.3		41.8	3.3	L
9.4	7	5.3	12.4	
8.9		11.9	16.2	A
8.5		28.5	25.9	A
9.5		28.8	13.8	
8.2		29.5	8.7	A
9.8		39.8	16.9	
9.2		50.6	7.7	
9.8	8	0.2	31.6	
9.8		1.5	42.9	
9.7		2.7	51.2	
9.6		38.1	4.2	
9.2		51.3	21.7	
9.8	9	37.6	46.3	
9.2		39.7	57.5	
9.3	10	30.8	19.4	
9.5	11	26.0	46.2	
9.1		32.3	22.1	
9.3	12	7.5	52.0	
9.0		10.0	2.8	
9.8		23.8	3.2	
9.2		29.3	4.4	
9.5	13	8.8	23.0	
9.2		18.4	35.7	
9.3		19.0	50.7	
6.3		42.7	43.3	A
9.4		45.2	0.8	
9.3	14	22.0	34.7	
9.8		35.9	48.9	
9.8		46.3	32.9	
9.3		56.8	42.7	A
9.3	15	7.6	9.4	
9.3		9.9	16.8	
9.2		18.3	35.5	
8.7		20.6	26.6	
9.3		37.7	32.1	
9.5		49.6	7.0	
9.8		56.2	58.6	
9.8	16	44.1	0.4	
9.8	17	17.5	13.8	
10		47.5	4.2	
9.0	18	1.5	21.1	A
10		35.4	20.5	
9.8		36.2	29.0	
9.5	19	15.5	6.5	
10		36.0	8.5	
9.8	20	34.5	16.0	
9.2		37.0	29.4	A
9.4	21	0.7	39.9	
9.8		4.7	24.9	
9.6		25.6	59.8	
9.5		37.6	57.8	
9.5		59.9	5.9	
9.8	22	22.7	42.9	
8.7		23.3	17.2	
9.1		55.1	38.2	A
7.3	23	5.1	48.8	A
10		5.8	15.9	
9.0		23.8	20.4	A

3621—3680

m	13h m	s	−18° ′	
9.4	24	7.0	36.2	
9.6		8.5	44.9	
9.3		15.8	20.3	
9.7		33.6	19.9	
9.7		34.1	5.9	
9.2		35.2	31.2	A
10		50.6	5.9	
9.4	25	0.2	2.8	
9.5		4.2	18.1	
9.0		11.8	30.4	A
9.8		45.8	10.9	
8.5	26	32.1	21.7	A
9.2		45.3	6.3	
9.3		47.9	15.5	
9.8	27	12.4	39.2	
9.1	28	0.4	57.9	
9.2		9.6	21.0	
9.4		17.7	33.7	
10		32.9	56.1	
9.0		37.9	50.8	
9.6	29	1.8	47.9	
9.5		24.6	10.2	
9.5		30.9	43.2	
9.1		36.8	52.6	A
9.2		38.2	8.7	
9.9	30	8.3	31.9	
8.5		18.2	26.7	A
9.0		36.9	26.5	
9.3		39.8	43.0	
8.8	31	16.3	53.1	B
9.2		19.8	58.1	B
9.1		43.1	56.8	
9.5	32	9.4	23.5	
9.4		10.3	29.5	
9.3		23.2	28.5	
9.1		28.0	12.8	
10		47.7	50.2	
10		47.8	24.9	
9.7	33	20.1	32.8	
8.2		52.5	24.0	B
10		57.7	41.3	
7.7	34	0.4	14.9	A
9.8		21.5	38.1	
9.1		28.7	25.9	
9.0		31.2	39.5	
9.5		34.5	3.1	
9.3		54.9	9.2	
10	35	19.2	59.8	
9.8		23.6	30.8	
9.5		28.1	56.1	
9.6	36	2.3	15.8	
9.8		7.1	48.7	
9.8		30.4	7.5	
9.4		34.5	52.2	
9.4		35.3	43.8	
9.0	37	4.7	22.7	
9.1		29.5	36.1	A
9.5	38	20.3	9.8	
9.3		26.3	28.7	
9.8	39	19.2	6.5	

3681—3740

m	13h m	s	−18° ′	
7.2	39	19.9	31.4	A
8.9		26.5	36.7	
9.8	40	16.4	45.2	
9.0		55.2	24.9	
9.7	41	33.6	28.4	
9.7		34.1	50.2	
10		55.8	32.7	
9.8		57.4	41.2	
8.8	42	13.9	38.1	A
9.8		28.8	46.3	
8.5		33.8	41.0	A
9.2	44	19.5	20.7	
10		54.6	19.1	
8.4	46	0.9	27.1	A
9.7		25.1	50.7	
10		30.1	50.6	
9.1		59.5	51.6	A
6.9	47	5.7	30.1	B
8.7		10.2	36.6	A
9.5		12.9	34.0	
10		33.2	31.0	
8.3	48	32.2	31.1	A
9.7	49	14.5	29.8	
9.7		42.6	58.2	
9.6		49.5	51.1	
9.0	50	9.9	0.0	
9.3		24.0	38.7	
9.7		49.0	33.0	
9.7		59.0	28.3	
9.5	51	3.0	11.1	
9.8		12.5	47.9	
9.4		25.0	31.6	
9.4		39.3	11.7	
9.8	52	23.4	42.5	
9.5		27.2	18.1	
9.5		37.9	33.1	
9.8		48.9	49.9	
9.0		55.1	59.1	A
9.9		55.4	34.2	
10	53	30.1	44.5	
9.5		30.2	6.5	
9.5		50.1	19.0	
9.2		51.5	23.7	
10		57.3	42.4	
10	54	7.4	44.9	
9.5		27.5	24.3	
10		47.9	49.4	
9.8		50.2	7.8	
9.5	55	0.3	48.1	
9.5		2.7	1.8	
10		15.9	38.2	
9.0		16.6	0.0	
9.5		19.8	54.7	
9.5		25.3	25.6	
9.4		37.6	5.0	
9.7	56	5.2	25.6	
9.7		7.5	21.0	
9.4		40.9	27.5	
9.3		52.7	24.6	
9.6	57	2.6	6.2	

3741—3800

m	13h—14h m	s	−18° ′	
10	57	3.8	15.3	
9.8		29.2	48.1	
9.3		44.7	55.7	
9.8		48.7	51.7	
9.4		59.1	4.4	
9.8	58	14.4	19.6	
9.5		37.0	12.0	
9.4		40.5	38.8	
9.5	59	6.9	48.0	
8.2		9.7	35.8	B
8.6		28.5	4.6	A
9.3		48.0	12.9	
9.6	0	14.1	39.9	
9.2		19.0	10.8	A
9.5		30.3	52.2	
10		34.4	6.9	
7.3	1	0.0	33.0	A
9.4		13.3	40.6	
9.4	2	8.7	24.9	
9.8		29.3	28.7	
8.6		42.4	2.9	A
9.8		56.9	31.5	
8.9	3	0.3	27.5	B
9.0		21.5	48.5	A
9.1		24.8	3.2	
7.8		46.2	19.5	B
9.0		49.0	53.9	A
9.1	4	0.8	11.9	
8.9		22.8	4.0	A
9.2		36.2	31.8	
9.8		42.6	28.6	
9.3	5	0.9	37.8	
9.5		2.7	12.5	
9.3		53.6	23.4	
9.5	6	24.6	46.0	
9.5	7	16.1	50.8	
9.3		28.8	38.5	
10		51.3	48.8	
9.3	8	43.1	13.1	
9.5	9	15.5	37.6	
9.2		22.7	24.0	
9.2		27.2	48.4	A
9.0	10	2.7	57.5	A
9.5		5.2	41.9	
9.5		16.0	23.0	
8.8		21.4	24.8	
8.7		24.2	53.4	A
9.4		25.2	32.1	
6.2		37.2	2.3	B
9.5	11	0.8	58.4	
9.8		10.0	7.4	
10		12.3	44.3	
10		13.7	47.7	
9.7		38.8	30.9	
10		42.0	30.7	
9.5	12	5.0	39.2	
9.8		6.9	14.2	
8.0		48.0	39.9	B
8.5	13	1.6	19.3	B
9.0		18.1	9.0	

3632: 31:82 21′43″3 B_2, Ep. 1885.33

3801—3860				3861—3920				3921—3980				3981—4040				4041—4100			
	14h	—18°			14h	—18°			14h—15h	—18°			15h	—18°			15h	—18°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.8	13 26.1	40.4	B	9.3	27 51.0	57.7		10	44 28.3	3.2		9.4	0 24.4	53.7		8.6	12 46.0	21.6	
9.8	43.0	4.4		10	28 36.3	39.3		9.7	55.2	25.0		8.7	24.9	39.6	A	9.4	48.1	36.3	
9.6	47.6	46.4		9.0	38.6	12.2	A	8.6	58.1	3.2	A	9.8	38.5	10.8		8.9	48.5	7.9	A
8.8	55.0	8.1		9.7	50.5	14.6		8.3	45 25.9	33.0	A	9.8	43.0	7.0		10	13 1.7	37.6	
9.9	14 6.7	28.7		10	29 16.3	29.7		9.2	38.4	10.3	A	9.3	55.5	45.2	A	9.4	14.5	25.0	
9.3	15 4.8	31.2		9.5	30 4.0	6.2		9.0	46 11.0	21.9		10	1 6.2	51.1		10	25.5	37.4	
9.2	19.5	32.0		10	34.8	21.6		9.2	13.8	53.4		10	14.9	33.0		9.0	14 12.4	58.9	
9.0	21.0	59.8	A	9.3	31 4.9	37.0		9.5	43.9	44.6		9.8	33.6	9.3		10	24.7	5.8	
9.5	25.0	49.3		9.0	8.4	49.6		9.8	52.5	26.1		9.2	41.7	22.9	A	9.3	42.0	48.3	
9.6	36.4	19.0		10	28.3	42.3		9.5	47 0.5	18.8		10	55.3	8.5		8.7	45.5	19.4	A
9.3	16 18.0	42.0		9.3	57.8	17.0		9.8	37.4	29.0		9.4	59.4	50.7	A	9.5	15 7.6	36.6	
9.2	19.8	36.6		8.8	32 5.4	44.3		10	50.0	27.7		10	2 12.1	4.0		9.4	8.8	11.0	
8.7	45.9	40.0		10	9.8	56.0		7.5	48 8.7	20.1	A	9.1	46.6	1.6	A	9.1	55.3	35.3	
9.7	48.4	17.2		9.3	20.9	45.0		9.3	56.2	20.1		9.5	55.4	35.5		9.8	56.2	45.5	
9.8	17 42.3	21.6		8.6	50.4	10.7		9.4	49 28.7	53.3		9.4	3 37.4	44.6		9.1	16 23.3	34.7	A
9.0	43.4	51.7	A	9.2	52.5	5.1		10	44.5	18.1		9.5	41.3	45.0		9.3	43.6	20.6	
9.5	44.3	24.5		9.2	33 10.3	44.1		9.7	56.3	27.8		6.6	58.3	33.4	B	9.3	44.1	6.1	
9.4	18 4.5	26.6		9.6	27.4	6.3		9.4	50 26.7	12.3		10	4 19.6	47.8		9.8	59.1	15.9	
9.0	18.9	57.3	A	8.0	42.3	2.6	A	10	35.6	9.9		9.0	30.8	16.3	A	10	17 21.4	50.0	
10	26.4	56.1		9.3	34 28.7	22.3		9.2	45.8	45.0	A	10	36.3	2.7		9.8	26.4	27.2	
8.5	32.9	10.0	A	9.6	32.3	36.4		8.8	51 9.2	49.7	A	8.7	41.3	44.7		7.2	37.7	0.2	A
9.5	19 0.3	20.3		7.0	37.5	41.2	A	8.5	31.8	43.2	A	10	45.9	30.0		10	40.9	10.0	
9.5	29.6	56.9		10	47.4	8.4		9.9	49.9	31.7		10	5 21.7	19.7		9.2	52.6	4.4	A
9.3	45.7	33.1	A	9.0	35 17.6	26.2		9.5	59.2	56.2		9.4	39.9	7.2		10	53.7	47.1	
9.0	55.3	38.7	A	8.7	25.5	20.1	A	7.8	52 11.9	3.1	A	9.4	52.8	17.5		9.9	19 5.8	55.7	
9.4	20 1.8	48.3		9.4	36 33.9	54.8		10	12.3	27.5		10	55.6	48.0		9.8	14.6	2.5	
9.2	4.5	2.0		9.6	56.6	58.9		9.8	22.2	10.6		7.5	6 5.7	24.5	B	9.3	18.0	5.2	A
9.9	8.9	10.9		9.0	37 27.0	28.0	B	9.8	26.5	23.0		8.5	14.4	42.2	A	9.3	21.9	39.2	
10	13.3	54.2		8.5	47.3	20.6	B	10	43.3	6.5		9.5	18.0	47.8		9.8	34.2	23.5	
9.1	17.4	28.0	A	10	47.4	4.3		8.5	53 18.7	41.2	B	9.4	28.2	51.9	A	9.8	45.3	57.3	
10	48.7	24.9		8.4	54.6	21.9	B	8.0	19.6	13.5	A	9.3	42.8	8.8		9.8	20 12.4	6.8	
9.4	50.7	28.9		9.5	57.5	16.1		9.2	35.0	28.4		10	54.7	31.9		9.9	14.1	18.2	
9.6	21 5.7	15.3		9.5	38 4.4	11.4		10	58.1	34.6		9.2	7 27.0	24.6		9.1	27.4	37.5	
9.4	7.0	29.3	A	9.4	22.5	24.5		9.1	54 8.4	59.2		10	42.1	11.3		8.2	27.6	13.1	A
9.0	26.6	3.2		9.8	25.0	17.0		9.1	10.0	31.3		9.0	53.5	34.9	A	9.7	31.3	13.5	
9.4	34.7	30.0		9.5	37.7	29.2		10	16.6	4.7		10	8 2.5	44.4		8.7	21 6.8	53.9	A
8.8	42.9	31.9	A	9.5	42.8	34.3		9.6	29.0	19.6		8.5	6.4	5.5	A	10	8.1	17.8	
9.5	57.2	55.9		9.0	43.2	43.8		10	31 6	55.4		9.1	55.5	33.8	A	10	45.2	38.4	
9.8	22 31.3	10.7		9.8	39 18.1	57.2		9.0	33.3	45.3	A	9.8	9 3.7	49.5		9.3	22 26.2	1.0	
9.4	49.6	49.5		10	43.8	48.7		9.8	35.6	17.3		10	5.5	50.7		10	29.3	10.6	
9.8	23 2.6	45.3		10	40 3.9	35.3		9.7	55 9.2	27.9		9.1	6.0	28.9	A	9.9	40.3	17.2	
10	21.9	52.5		9.4	7.3	32.4		9.8	45.5	9.2		9.3	13.1	54.4		10	41.1	8.7	
8.6	40.8	3.7	A	9.7	11.0	23.2		10	56 18.6	39.1		9.5	25.7	40.5		7.9	46.5	20.2	A
9.3	43.3	51.9		8.8	41 26.2	54.0		9.8	36.0	13.9		9.1	49.3	58.6		9.6	55.4	21.7	
9.5	24 22.7	4.9		8.5	33.6	20.3	A	9.0	43.7	1.4		9.3	49.5	21.3	A	10	23 10.7	0.9	
8.5	27.7	10.9	A	8.7	42 19.5	15.4	B	9.4	58.8	49.6		9.1	50.6	38.3		10	29.0	59.5	
9.4	25 14.1	56.5		9.0	20.3	36.3	B	10	57 1.5	3.8		9.4	10 5.5	31.0		10	55.4	37.4	
10	23.1	22.3		8.5	26.7	1.8	A	10	6.2	22.6		9.3	5.9	44.5		8.8	24 15.7	54.5	A
10	23.9	4.3		9.1	28.6	57.2	A	8.7	9.4	3.8	B	9.1	12.8	56.0		9.8	23.0	8.5	
8.7	29.6	39.1	B	8.2	44.2	52.6	A	9.7	12.6	29.7		9.3	13.3	42.6		9.5	54.2	52.7	
9.4	38.5	20.8		9.3	51.6	7.3		9.5	13.5	17.4		9.5	21.7	5.4		9.6	25 21.6	18.1	
8.5	43.1	33.5	B	8.0	43 0.5	19.2	B	7.5	58 1.6	48.6	A	9.0	31.6	51.3		9.2	30.7	52.1	
8.0	26 3.1	52.7	B	10	8.1	6.6		8.9	2.8	34.6	B	9.4	11 8.5	57.3		8.5	26 11.6	34.1	B
8.4	7.1	35.3	B	9.4	17.5	14.6		8.9	9.9	32.0	B	8.2	10.2	38.5	A	9.8	25.6	15.2	
9.8	15.6	57.6		9.0	20.0	5.1		9.0	14.7	10.1		9.5	22.6	12.8		9.8	41.8	25.4	
9.8	58.2	9.0		9.5	31.6	13.3		9.8	46.6	6.3		9.4	54.1	34.9		9.0	59.9	25.2	
9.1	27 5.7	6.5		10	40.9	54.7		9.5	52.9	15.1		9.5	12 2.0	0.6		8.8	27 2.1	14.1	
9.0	17.1	59.9	B	10	54.8	58.0		9.8	59 47.8	27.9		9.8	14.8	0.4		9.5	27.0	30.9	
9.0	17.4	11.4	A	9.8	56.9	36.4		9.8	53.5	28.1		10	15.0	41.0		9.6	29.6	52.1	
8.8	49.2	20.0	A	8.8	44 9.6	50.3	A	9.1	0 10.4	57.7		10	33.9	16.3		9.5	30.9	13.0	

4101—4160				4161—4220				4221—4280				4281—4340				4341—4400			
	15h		−18°		15h		−18°		15h—16h		−18°		16h		−18°		16h		−18°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.8	27	39.4	48.6	9.8	38	16.9	49.6	9.3	54	36.1	5.8	8.8	18	14.4	48.0	A	9.8	43	33.5	0.8	
9.0		39.9	37.7	10		25.0	24.3	9.3		39.5	22.5	5.2		37.1	7.3	A	9.0		45.7	54.3	A
9.2		42.0	29.9	8.5		38.8	40.6	A	8.5	55	37.8	42.1	A	9.1	19	10.0	8.9		9.5		52.7	22.6	
9.8		57.2	11.9	8.8		52.6	1.5	A	10	56	4.6	16.3		9.8		21.2	51.0		9.1	44	5.4	8.3	
9.0	28	23.7	41.9	9.8	39	15.9	6.7		10		18.4	23.9		9.3	20	10.1	58.6		9.1		20.3	22.1	
9.7		30.7	30.8	10		26.3	12.6		8.4		25.3	44.9	A	9.5	21	1.1	35.8		9.4	45	4.3	39.4	
9.1		48.6	39.2	8.6	40	17.7	46.1	A	9.5		35.1	10.0		8.0		17.5	20.8	B	9.2		9.0	56.2	
9.2		55.6	15.1	9.9		19.2	0.6		6.8		42.3	8.1	A	8.9	22	2.0	1.2	A	9.3		9.1	35.0	
9.8		58.6	41.0	9.2		26.1	57.9	A	9.4		55.3	34.3		9.8		38.0	18.1		9.3		25.6	43.9	
9.5	29	18.3	18.3	9.5		31.3	14.8		9.1	57	2.9	16.0	A	9.5		42.4	12.6		8.5		29.8	39.6	
9.0		24.1	56.4	A	8.0		46.7	15.4	A	9.2		13.3	19.4		9.3	25	5.8	29.3		8.7		33.8	30.0	
8.7		24.4	45.4		9.5		48.6	48.6		9.5		33.2	34.7		9.6		33.1	16.4		9.1		38.8	26.7	
9.5		25.2	7.1		10		55.3	47.7		9.5		39.4	31.3		9.5		45.3	10.8		9.4		44.9	20.7	
9.5		28.5	41.0		10		56.4	52.9		8.7		49.0	59.0	A	9.3	26	46.6	40.2		9.8		53.7	56.2	
9.5		30.5	52.1		9.9	41	16.6	21.5		8.5	58	4.0	15.9	A	8.2	27	4.9	22.4	A	9.5	46	22.7	52.8	
9.5		45.1	26.9		9.8		54.9	29.6		10		16.3	0.2		9.0		39.4	15.6	A	9.5		27.1	12.4	
9.9		59.0	52.4		9.2	42	17.6	1.4		9.8		28.7	3.6		8.5	28	4.9	58.3	A	9.1		35.8	31.7	
6.0	30	34.1	49.1	A	9.0		18.7	16.0		9.5	59	20.4	34.0		8.5	29	9.9	4.5	A	7.7		37.7	38.3	B
10		37.5	3.8		9.3		57.6	49.0		10		40.3	3.5		9.3		11.2	32.0		9.5	47	34.7	0.4	
10	31	5.7	1.5		9.4	43	4.4	39.2		7.5	0	39.1	36.4	A	9.8		32.9	44.0		9.9	48	0.8	18.5	
9.9		15.4	29.0		9.8		10.7	43.7		9.3		42.0	39.4		9.5		46.2	56.1		9.7		7.9	23.0	
9.7		33.4	39.2		7.2		17.6	29.5	A	10	3	31.1	26.8		7.1	30	8.1	31.8	A	9.5		43.5	10.4	
9.8		35.7	59.2		9.5		48.7	43.2		8.1		41.4	40.9	B	9.4		25.4	51.4		9.5	49	14.8	36.3	
9.8		59.4	24.2		9.8	44	11.0	11.6		10	4	16.1	37.8		9.0		35.2	14.0	A	9.5		29.6	36.6	
9.4	32	11.6	13.2		9.6		18.1	17.7		9.8	5	20.3	24.1		9.4	32	5.6	8.0		9.0		43.4	59.7	
9.6		16.8	32.5		9.2		21.7	44.1		9.2		47.4	57.6		9.6		18.0	52.3		9.4		56.9	6.7	
9.4		25.4	55.6		9.0		47.2	42.6	A	8.5		50.1	27.7		8.8	33	31.7	39.5		9.0	50	6.8	8.1	
9.5		42.1	37.7		10		48.9	18.1		9.2	6	16.1	49.2	B	9.4		45.1	19.6		9.8		40.5	23.3	
9.1		49.8	20.8		8.9	45	0.1	57.8		6.5		17.7	9.4	B	9.7	34	49.9	41.6		10		42.1	28.5	
9.1	33	14.3	20.3	A	9.2		24.0	6.0		9.7		26.9	51.7		9.0		50.6	10.7	A	8.8		56.5	32.4	
9.5		19.9	37.9		7.5		35.0	30.8	B	9.1		40.5	2.3		9.5		53.1	20.2		9.8	51	2.3	15.7	
9.0		27.9	17.6	A	9.5		56.7	23.0		8.5	7	57.3	13.8	A	9.4	35	1.6	58.7		6.7		17.9	0.7	A
8.2		34.8	59.4	A	9.5		57.5	57.5	A	9.1	8	16.3	14.9	A	9.8		28.3	2.8		9.5		34.2	42.1	
10		45.2	16.4		9.1	46	27.4	5.2		9.5		47.4	6.4		9.5		28.8	45.6		9.2		42.0	25.8	
9.6	34	10.4	6.5		6.3		37.5	57.1	A	9.6	9	16.8	44.7		8.0		38.6	15.7	A	9.0		43.7	28.1	
8.0		21.0	8.0	B	8.6	47	16.5	21.8	A	9.5		23.3	15.1		9.4	36	13.4	11.1		8.3		49.6	56.7	A
9.5		34.8	31.5		9.2		57.3	11.1		10	10	35.9	26.7		9.3		30.5	26.3		9.3	52	0.3	5.2	
9.5	35	12.0	7.6		9.8	48	0.0	30.8		9.7	11	3.0	50.7		9.6		33.3	54.2		9.5		34.2	47.5	
9.8		28.3	52.4		9.6		2.2	29.7		9.7		7.9	1.1		9.8		58.6	9.8		8.5		55.3	42.7	A
9.4		44.3	28.7		9.7		8.6	9.2		7.0		11.5	28.1	A	6.7	37	1.8	51.9	A	9.4		55.6	32.6	
9.8	36	2.9	37.5		10		25.7	21.2		9.0		26.5	31.0	A	9.0		2.9	12.6		6.5	53	22.7	39.8	A
9.5		4.1	54.8		9.5		27.3	28.4		10		32.4	49.0		9.2		19.6	25.4		9.0		34.3	59.0	B
10		7.0	8.6		9.5		31.6	50.7		9.5		35.2	30.4		9.4		37.1	10.1		9.5		34.6	53.5	
9.9		7.7	49.3		9.3		35.5	42.1		9.0		49.9	3.8	A	8.8	38	12.9	31.3		9.4		58.7	16.9	
9.4		22.1	0.0		9.8		52.1	39.8		9.8		56.3	59.7		9.5		19.5	13.5		9.6	54	3.9	46.7	
10		29.6	11.8		9.3	49	16.5	50.9		8.0	12	5.8	20.1	A	9.8	39	8.5	15.7		9.9		4.2	39.7	
9.1		34.6	17.1	A	9.8		50.9	55.7		9.5		18.2	51.1		10		10.5	56.5		9.4		28.2	28.2	
9.8		40.5	1.8		9.3		59.6	12.0		9.3		23.2	25.2		9.3	40	38.2	43.6		9.8		33.2	50.7	
10		46.4	44.6		9.0	50	2.8	2.9		9.7		45.7	30.8		9.5		58.8	10.4		9.5		41.9	50.5	
9.5		47.9	49.6		9.2		45.0	29.3		9.5		57.7	19.9		7.9	41	2.3	39.8	A	9.2		53.3	34.1	
9.2		57.6	1.0		9.5	51	28.7	7.6		9.5	13	12.0	52.1		10		8.9	27.1		8.8	55	8.7	43.1	A
7.7	37	3.8	38.8	A	10	52	6.2	46.4		9.0		29.6	13.5		8.4		21.6	0.1	A	9.4		18.4	17.6	
10		36.0	46.7		8.8		37.4	33.1		9.5	14	19.2	34.7		9.6	42	4.6	37.6		9.7		20.6	10.2	
10		37.4	40.1		8.8		39.8	53.1	A	8.9		45.0	24.6		8.7		20.4	47.9		9.5		25.3	20.1	
10		40.3	14.6		9.8		43.4	40.6		9.5		47.7	23.9		9.7		35.7	54.8		9.5		27.8	46.8	
10		41.0	56.3		9.4	53	26.5	27.2		9.7	16	9.2	51.1		7.4		41.0	56.1	A	9.8		45.2	41.0	
9.4		43.0	45.5		9.3		59.7	26.6		9.3		17.0	34.3		9.5	43	4.7	49.8		9.0		52.9	27.0	
9.9		48.7	20.8		9.7	54	24.2	38.3		9.4		34.5	46.9		9.4		11.8	30.1		9.7		59.7	30.4	
8.9		49.0	54.6	A	9.8		27.7	26.5		9.5	17	26.1	51.8		9.4		19.9	9.7		9.7	56	0.9	7.7	
9.3		50.7	39.7		9.3		30.9	48.0		9.3		46.1	43.3		9.5		29.0	40.4		9.3		5.8	8.6	

4320: roth

4401—4460				4461—4520				4521—4580				4581—4640				4641—4700			
	16h—17h	−18°			17h	−18°			17h	−18°			17h	−18°			17h	−18°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.8	56 13.6	16.1	A	9.5	5 43.5	24.2		9.6	16 41.1	29.4		9.7	27 38.8	26.1		9.7	38 9.2	9.4	
9.5	17.9	24.6		9.4	55.0	50.0		9.0	44.1	33.0		9.1	49.9	44.2		9.1	26.9	6.3	
9.5	48.8	27.0		9.0	58.0	23.1	A	9.7	50.1	32.6		9.2	50.0	18.2		9.5	32.6	37.2	
9.1	52.9	29.1		9.8	59.1	2.0		8.5	52.2	8.7	A	9.8	28 4.1	7.5		9.7	56.2	39.9	
9.5	59.5	9.4		9.7	6 9.4	59.3		9.5	17 1.8	55.6		9.2	29.1	5.4	A	7.0	58.4	2.5	A
10	57 0.9	34.7		9.7	17.8	57.0		9.5	53.4	59.8		7.0	31.8	53.5	A	9.6	39 2.7	50.3	
10	28.5	45.7		9.3	24.2	42.3		9.5	18 12.6	8.1		9.8	43.6	34.7		9.7	8.4	15.2	
9.5	35.7	3.0		9.8	44.0	53.5		8.9	34.0	51.6		9.5	46.0	17.2		8.5	12.2	52.2	B
9.7	38.5	26.6		9.6	44.6	8.2		9.5	37.9	30.4		9.5	48.8	49.2		9.0	37.1	14.1	A
9.1	48.8	26.0		9.5	7 1.0	15.5		9.3	57.4	49.8		9.8	29 15.4	26.0		9.0	40 8.2	50.5	
9.8	58 5.5	23.6		9.7	9.3	36.5		8.3	19 5.6	13.5	A	9.3	29.6	54.0		9.4	26.8	13.3	
8.9	35.8	52.5		8.8	15.7	0.9	A	9.5	18.4	27.7		9.3	49.9	59.1		9.8	44.3	31.8	
8.2	40.6	20.3	A	9.8	19.4	30.4		9.5	19.9	35.5		9.5	52.0	32.8		9.1	41 46.2	38.8	
9.5	43.0	31.8		9.9	38.8	30.0		9.6	31.3	56.5		9.8	30 9.9	31.4		9.5	47.7	59.9	
9.1	56.6	47.8		9.1	42.1	52.2	A	9.5	39.0	28.8		9.0	17.1	5.3	A	9.5	59.4	4.2	
9.5	59 9.0	16.8		9.3	45.7	41.7		8.7	20 7.0	10.4	A	9.6	20.2	35.2		9.5	42 3.7	44.4	
9.5	11.5	21.9		9.9	45.7	29.5		9.2	21.0	36.9		9.1	38.7	38.0		8.3	4.5	51.6	A
8.5	16.1	21.6	A	9.0	8 3.6	20.7		9.2	30.7	47.6		8.5	48.3	19.0	A	9.5	39.8	41.1	
10	21.3	55.8		9.4	13.0	23.0		9.1	45.4	32.8	A	9.1	57.4	56.0		9.0	45.0	29.5	
9.8	40.1	39.4		9.8	29.0	38.9		8.7	57.4	32.5	A	9.4	31 0.3	43.5		8.5	43 8.4	40.6	B
9.0	41.0	14.9	A	9.9	48.6	55.1		9.8	21 15.1	26.1		9.2	9.1	2.7		10	25.4	37.9	
9.7	47.0	35.0		9.0	53.6	57.0	A	9.5	16.4	0.6		9.7	15.0	30.7		9.2	26.1	55.0	
8.7	51.6	11.3	A	9.5	59.1	59.4		9.8	30.6	8.3		9.5	22.7	47.0		10	34.3	8.0	
9.8	0 21.7	25.8		9.7	9 22.9	51.3		9.8	42.1	2.4		9.8	28.5	42.5		9.5	43.6	47.6	
9.5	27.3	45.1		9.6	37.7	26.6		9.4	22 0.1	40.0		9.3	32.7	44.1		9.4	48.5	39.8	
9.8	32.7	26.5		10	10 17.1	0.1		9.7	0.4	49.3		9.5	33.8	27.1		7.3	54.4	2.9	A
8.2	40.4	4.0	A	9.2	18.8	8.0		8.0	8.9	59.9	A	9.6	39.6	28.6		10	44 13.7	36.7	
9.0	40.5	53.4		neb	42.7	21.8		9.5	24.9	49.3		9.0	47.1	9.0	A	9.8	14.0	55.8	
9.4	44.4	24.9		7.5	11 0.1	47.5	A	9.8	37.0	32.4		9.4	55.5	44.0		9.8	27.1	33.5	
9.3	54.4	17.8		9.5	4.6	47.9		9.5	37.7	2.1		9.5	32 11.5	17.7		9.5	31.8	9.1	
9.8	1 8.6	49.6		9.0	23.1	56.0	A	9.3	44.5	38.1		9.3	14.6	35.7		10	42.8	4.0	
8.9	10.4	29.4	A	8.5	28.9	50.9	A	9.4	48.0	15.7		9.0	15.6	0.3	A	8.5	50.1	50.4	A
9.5	22.9	12.8		9.3	33.3	26.0		9.4	23 12.9	27.3		9.5	27.2	38.4		9.8	54.0	53.7	
9.7	34.1	43.4		8.7	46.9	39.9		9.6	25.9	20.1		9.3	29.6	7.7		8.7	45 46.1	25.6	A
9.0	48.5	44.2	A	9.3	51.5	32.9		9.6	34.1	2.3		9.8	36.9	56.4		9.0	58.0	56.9	
9.5	54.9	38.2		9.4	12 7.2	40.0		9.8	50.4	56.9		9.0	39.7	4.0	A	9.2	46 12.3	1.8	
9.1	2 12.2	34.3	A	9.8	7.9	22.6		9.5	52.9	44.1		9.2	45.7	33.5		9.5	17.6	28.5	
9.1	24.0	55.2	A	9.5	14.3	47.1		9.6	24 9.8	17.5		8.5	47.7	33.5	B	9.5	30.2	9.3	
9.1	46.1	41.2	A	9.2	23.0	45.3		9.3	13.0	32.1		9.3	50.1	25.2		8.3	36.7	15.3	A
9.0	53.5	24.1		9.6	28.1	18.0		9.5	26.5	8.3		9.8	50.3	18.2		9.6	54.3	40.7	
8.3	3 5.1	9.1	A	10	38.7	16.9		9.2	32.0	32.6		9.5	33 7.9	35.0		9.7	57.0	39.5	
9.5	27.1	11.0		9.5	58.2	8.0		9.4	49.6	16.2		9.1	21.6	2.9		9.5	58.4	25.5	
9.5	29.9	17.1		9.0	13 6.9	30.4	A	9.6	57.0	25.2		9.9	42.4	33.9		9.3	59.6	40.6	
9.0	48.0	43.6	A	8.5	18.7	11.3	A	7.8	58.1	13.7	A	9.8	44.8	32.6		9.0	47 9.3	11.1	A
9.7	51.1	28.6		9.7	49.3	35.1		9.5	25 9.5	57.4		9.5	58.0	14.9		9.0	20.4	59.1	
9.4	55.2	3.9		9.8	49.5	38.2		9.7	12.4	39.3		9.3	34 5.9	22.8	A	6.0	23.2	46.3	B
8.6	58.1	21.6	A	8.5	53.1	29.9	A	9.0	47.7	40.2		9.5	18.1	2.4		10	25.2	29.0	
9.4	4 0.2	36.0		8.8	58.7	57.6	A	9.5	49.5	28.9		9.5	23.5	8.7		9.8	34.9	36.0	
9.5	10.4	59.6		9.0	14 22.3	2.9		9.1	51.5	30.4		9.2	42.5	13.9	A	10	35.9	44.2	
9.0	11.0	22.5	A	9.8	22.8	36.8		7.0	26 4.6	6.6	A	9.5	51.6	35.4		9.5	36.3	2.6	
8.9	31.0	59.5		9.5	23.8	39.4		9.3	25.4	34.0		8.8	35 20.0	58.3		9.5	45.4	21.8	
10	41.6	24.0		10	15 13.2	3.0		9.2	27.3	8.9	A	9.2	36 2.0	47.4		10	46.6	50.6	
9.8	52.7	53.0		9.5	29.7	19.1		9.3	32.2	13.6	A	9.1	13.5	52.1		9.0	48.4	11.4	A
8.9	54.3	33.7		8.5	56.0	42.4		9.3	40.0	40.2		8.5	25.9	35.7	A	9.3	54.8	16.9	
9.4	5 8.0	32.5		9.2	16 0.4	34.2		9.5	48.1	17.3		9.6	28.7	30.5		10	55.2	51.4	
8.5	8.1	21.6	B	6.3	7.6	18.6	A	9.4	50.9	39.3		10	37 8.2	2.5		10	56.1	34.9	
8.1	11.0	47.9	B	9.4	10.1	13.4		9.3	52.3	34.3		8.8	15.2	28.6		9.7	48 0.6	55.0	
9.8	23.6	30.5		9.5	11.2	11.2		9.0	52.6	8.5	A	9.1	16.4	20.1		9.4	2.2	53.7	
8.2	27.0	2.3	A	8.0	21.9	42.9		8.9	27 26.3	28.0		9.7	17.1	3.3		9.2	2.7	59.7	
9.6	34.1	11.9		9.8	30.2	8.7		9.0	28.3	32.5		9.5	41.8	27.0		9.1	9.4	49.0	

4701—4760				4761—4820				4821—4880				4881—4940				4941—5000			
17h		−18°		17h—18h		−18°		18h		−18°		18h		−18°		18h		−18°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	48 13.6	16.4		9.5	53 3.4	46.1		9.2	2 20.0	44.9		9.8	8 12.4	27.6		9.3	15 13.1	5.8	
9.6	15.6	55.4		9.4	4.0	58.7		8.8	23.3	53.5	A	9.5	19.1	35.7	WC	9.5	26.4	31.9	
9.0	16.0	28.6		9.5	6.8	49.0		9.1	26.6	51.3	A	9.5	21.4	43.4		9.4	50.1	41.4	
9.4	17.6	56.9		9.8	31.7	7.9		7.9	32.6	34.2	A	9.7	22.1	25.1		8.9	51.8	10.0	M
9.5	19.4	58.4		9.5	52.3	3.0		9.5	3 3.7	48.2		9.4	40.0	51.8		9.3	52.0	24.7	
9.8	25.0	52.8		9.0	54 29.9	4.3	A	9.2	15.9	24.6		6.7	58.7	30.7	L	9.5	54.3	3.0	
9.1	25.7	55.6	A	9.1	47.2	12.1		9.4	22.1	30.5		9.9	9 14.8	25.7		9.8	58.1	56.5	
9.5	25.8	36.6		9.1	55 1.4	36.8		9.2	25.1	41.7	A	7.3	19.6	50.6	A	9.3	59.6	45.0	
9.4	29.7	55.4		9.0	11.8	2.9	A	9.4	32.6	45.0	A	9.5	21.9	11.4		9.8	16 7.0	6.4	
9.3	31.3	57.7		9.0	12.6	52.5		9.2	41.4	27.8	A	9.7	25.9	25.5		9.3	10.1	41.9	
9.3	33.1	50.3		9.0	16.5	18.3		9.5	57.6	41.2		8.2	27.6	44.9	A	9.0	12.2	21.1	A
10	34.5	40.9		9.6	24.0	29.7		9.0	59.5	53.1	A	9.5	32.5	40.0		9.2	12.7	48.6	WZ
9.7	34.8	59.6		8.6	25.4	31.6		9.5	4 2.9	30.5		9.0	32.8	48.6	A	8.0	29.1	36.4	A
10	35.0	50.1		9.8	27.6	44.0		8.9	4.7	25.6	A	9.1	34.8	0.9		8.5	36.9	21.0	A
9.5	42.1	3.6		8.5	27.6	36.6		9.9	17.2	25.9		8.2	52.5	31.9	A	10	37.6	19.3	
9.8	42.1	42.9		9.0	29.9	22.8		9.8	23.6	46.2		7.3	10 12.6	40.4	A	9.8	54.9	47.5	
9.5	42.7	57.3		9.5	58.6	12.8		9.0	34.1	20.4	A	9.0	13.6	40.2	A	9.9	56.0	28.7	
9.5	46.0	56.4		9.5	56 3.1	13.7		9.6	41.6	37.5		9.8	16.4	3.7		9.5	17 16.3	55.2	
9.7	47.8	52.6		9.5	16.1	28.4		9.5	46.0	1.4		9.0	16.7	20.2		9.5	19.1	5.6	
8.8	49.4	10.5	A	9.5	16.4	6.1		9.8	48.1	19.5		8.2	18.0	13.3		8.3	41.0	37.1	A
9.7	52.9	52.3		9.1	19.4	34.5		10	5 3.4	28.5		9.5	21.4	11.2		9.5	45.3	30.2	
8.8	53.0	2.1	A	9.6	49.3	1.8		9.7	5.8	49.2	A	9.5	22.3	3.0		8.0	58.0	9.7	B
8.4	54.3	54.9	A	9.7	57 15.3	56.5		8.0	8.6	25.0	A	9.5	26.6	53.4		9.6	18 8.4	18.9	
9.6	54.3	48.9		9.7	38.8	36.8		8.5	14.5	50.7	A	8.7	30.0	33.9	A	9.8	16.3	18.0	
8.6	57.4	39.6		9.4	39.7	21.5		8.2	23.0	47.8	B	9.8	45.9	10.8		9.0	26.3	42.3	A
9.8	59.9	50.0		9.8	40.0	46.7		9.5	28.1	38.7		9.6	48.2	22.2		9.0	28.3	25.0	A
9.7	49 2.6	47.9		9.4	41.2	7.9		9.5	30.0	3.9		9.8	49.4	12.0		8.5	31.5	34.5	A
9.8	4.6	59.9		9.4	58 6.8	41.8		9.4	30.1	46.2	A	9.5	57.1	55.0		9.1	34.4	18.9	
9.3	4.6	33.3		7.3	11.2	59.4	A	9.6	41.7	55.6		9.1	58.5	16.6	M	9.0	46.6	27.9	A
9.3	9.3	59.5		8.8	17.3	49.1	A	9.5	53.1	58.1	WC	9.6	11 8.6	14.5		9.8	49.2	18.9	
10	15.5	47.5		9.0	17.8	5.7		8.3	55.5	11.5	M	9.8	11.4	6.3		9.5	19 3.7	0.8	
9.6	15.9	38.2		9.8	33.4	37.1		9.8	58.2	55.6		9.5	13.3	28.7		9.4	41.7	56.6	
9.9	18.8	39.3		9.6	35.2	55.8		9.2	59.1	18.5	B	9.5	14.1	12.4		10	55.6	54.6	
9.9	19.2	42.2		9.0	41.0	54.6		9.5	6 0.5	28.1		9.6	16.0	31.3	A	10	55.8	54.2	
9.4	22.2	53.0		8.5	59 11.1	3.0		9.5	1.3	49.1		9.8	17.3	34.3		9.5	20 4.3	27.8	
9.2	31.9	53.6		10	20.1	58.2		8.7	13.0	48.9	B	9.5	39.1	43.5		8.8	17.5	36.0	A
9.2	38.1	42.1		9.0	40.8	47.9		8.7	28.0	58.8	A	9.3	46.6	38.7	A	9.1	57.7	45.4	
9.5	39.0	15.1	A	9.0	48.3	57.1		8.3	29.3	35.3	B	9.8	49.6	21.6		9.5	21 5.4	28.6	
10	42.5	26.3		7.4	55.6	34.0	A	9.8	32.9	7.2		9.8	57.9	31.9		9.5	12.4	48.7	
9.0	46.6	9.4	A	9.1	0 7.0	23.9		9.5	36.6	36.9		9.8	12 22.2	28.2		9.3	28.4	21.2	
9.8	50 3.3	42.3		8.3	16.7	59.3	A	9.5	53.6	44.9		9.5	31.1	40.0		9.3	31.9	20.1	
9.0	12.8	44.0		9.0	20.4	57.1		8.7	55.5	57.6	A	9.2	36.0	8.6		6.5	40.3	48.6	A
9.5	27.5	19.0		9.6	23.5	56.5		9.0	58.0	24.2		9.8	40.5	2.1		9.5	53.8	46.9	
9.5	40.7	5.8		9.8	28.1	16.5		0.8	59.6	42.0	B	9.5	46.3	4.0		9.3	22 9.8	20.4	
8.1	53.9	11.3	A	9.4	32.4	26.1		9.1	7 13.0	59.3	A	9.5	49.6	52.8		9.8	29.2	57.6	
9.7	51 0.0	34.5		9.8	36.5	0.0		9.2	14.0	56.7	WC	6.0	50.3	55.2	B	7.5	48.3	59.6	B
9.6	1.1	50.5		9.1	39.3	43.6		9.5	16.0	28.1		9.5	57.6	35.7		8.1	53.0	21.7	B
9.3	8.1	32.0		9.5	41.8	45.0		9.5	21.2	14.7		9.0	13 3.1	29.4	M	6.0	56.7	30.0	A
9.0	13.4	32.3		9.4	45.2	59.0		9.0	23.9	28.6	B	9.5	9.3	13.1		9.5	23 0.3	56.7	
9.0	17.8	48.6		7.3	1 12.8	51.5	A	9.5	24.6	46.8		9.5	9.4	0.1		9.3	5.9	6.4	
7.8	58.2	33.9	A	9.5	29.0	19.5		8.4	25.9	17.1		9.1	10.5	35.1	WZ	9.3	17.1	51.0	
9.0	52 12.9	10.8		9.1	38.8	57.1	M	9.5	26.4	5.0		9.8	12.0	20.5		9.3	33.7	8.1	
9.1	17.8	57.1		9.7	43.3	11.9		8.6	39.6	50.5	A	9.5	16.4	6.8		8.8	55.7	27.3	A
9.0	17.9	44.3		9.5	48.3	40.8		9.8	44.0	16.5		9.5	30.0	54.3		7.1	24 39.7	27.9	A
9.5	18.7	19.2		9.0	48.7	12.8		9.4	44.8	29.1		9.8	14 6.7	23.1		9.5	43.3	47.3	
9.5	22.1	17.7		9.1	52.7	31.8		9.7	45.4	46.5		9.5	10.5	5.7		9.7	54.7	6.2	
8.5	34.5	3.6	A	9.8	59.4	12.5		9.7	45.9	11.8		9.4	11.5	4.5		9.5	25 1.3	52.1	
9.5	34.6	4.7		9.0	2 2.7	42.8	A	10	55.1	41.5	B	9.1	15.8	46.8	A	9.3	23.3	2.4	
10	40.3	11.7		8.4	13.5	30.3	B	9.7	56.9	48.2		9.7	40.1	26.2		9.8	32.6	12.9	
8.0	41.4	30.0	A	9.7	15.1	15.7		8.6	8 6.1	50.7	A	9.7	15 6.3	7.4		9.5	34.7	21.8	

4805: Hauptstern des Cumulus GC 4379 4986: 48:61 59′47″0 B_1, Ep. 1867.63 4987: var? (V Sagittarii)

5001—5060

m	18h m s	—18° ′	
9.5	25 40.9	23.5	
8.7	59.0	25.0	A
10	26 1.8	11.9	
9.5	6.0	55.5	
9.5	29.9	33.5	
9.5	57.4	28.2	
9.5	27 0.1	25.2	
8.0	5.9	39.5	B
9.6	27.3	49.5	
9.7	28.9	38.6	
9.2	48.6	12.6	
8.2	28 1.3	54.2	B
9.5	20.8	30.8	
9.0	37.6	2.5	M
9.5	51.9	39.0	
9.5	56.4	58.1	
9.2	29 10.1	25.5	
9.5	18.7	24.1	
9.8	20.2	11.9	
9.6	24.7	10.6	
9.4	31.9	44.0	
8.7	50.1	30.2	A
9.3	30 6.8	7.5	
9.0	11.9	54.4	M
9.4	12.1	23.7	
9.4	19.0	20.2	
9.3	46.7	32.5	
8.7	57.9	47.9	A
9.4	31 6.5	9.2	
9.4	22.8	3.0	
9.5	27.9	48.3	
9.5	50.1	30.9	
9.4	32 18.0	25.8	
9.3	38.3	20.1	
9.6	58.8	53.0	
9.1	33 4.9	51.2	A
8.5	7.7	6.8	A
9.4	8.3	8.9	
9.5	42.0	46.4	
9.4	46.8	5.8	
9.1	34 31.3	12.2	
9.4	37.5	10.7	
9.5	38.8	59.6	
9.0	40.1	17.9	
9.4	35 13.3	47.0	
9.3	22.3	7.5	
8.9	25.7	29.0	
8.8	33.9	53.8	WC
9.5	36 5.2	29.3	
9.3	27.4	17.3	
9.3	27.7	3.0	
8.8	32.7	13.9	A
9.8	35.9	43.8	
9.2	58.8	59.0	
9.1	37 3.7	12.8	
9.5	12.5	43.4	
8.0	23.5	30.3	A
9.5	38.4	38.7	
9.3	47.7	43.3	
9.5	38 21.5	2.0	

5061—5120

m	18h m s	—18° ′	
9.4	38 22.1	8.5	
9.5	40.4	48.5	
9.0	39 1.7	54.1	M
9.5	7.5	25.6	
9.1	11.8	16.0	
8.8	17.0	45.2	
9.6	23.5	3.2	
9.3	25.6	29.4	
9.3	26.2	16.4	
8.2	29.7	22.3	A
9.5	31.3	26.3	
9.7	33.9	4.3	
8.3	35.7	34.5	A
9.3	41.9	22.6	
9.3	53.9	12.3	
9.6	40 0.0	33.1	
9.4	12.7	53.3	
9.0	13.5	51.0	B
7.0	15.8	45.2	A
8.5	20.3	47.0	A
9.5	28.7	49.9	
9.3	29.0	20.5	
9.1	36.9	54.4	
9.5	49.6	23.0	
9.0	53.0	55.8	A
8.7	54.3	26.6	
9.0	56.4	34.1	
9.5	41 14.0	38.7	
9.5	14.2	46.0	
9.0	22.3	15.6	
8.8	33.5	35.8	M
9.4	34.2	30.4	
8.2	38.0	6.1	A
9.5	45.1	34.3	
9.4	48.7	35.3	
9.5	50.7	22.4	
9.3	51.6	12.9	
9.3	42 0.1	22.8	
9.7	2.6	28.8	
10	4.4	30.1	
9.2	9.4	22.4	
9.3	37.7	21.0	
9.5	40.5	8.4	
9.4	43.7	10.3	A
9.0	44.8	58.7	A
8.6	50.0	25.8	A
9.8	43 2.6	49.1	
9.8	5.4	33.2	
9.8	21.3	19.1	
9.0	28.5	36.7	A
9.5	31.9	59.0	
9.6	40.1	28.6	
9.5	44 18.5	9.2	
8.0	27.7	26.0	A
7.2	37.0	48.4	A
9.5	39.3	16.8	
9.1	41.5	43.8	
9.3	49.4	51.9	
8.7	49.9	57.7	A
9.1	59.9	33.9	A

5121—5180

m	18h m s	—18° ′	
9.5	45 18.3	45.8	
9.5	22.0	54.1	
9.5	27.8	27.5	
9.6	45.6	2.0	
9.3	54.8	2.3	
9.1	56.4	13.3	
9.4	46 1.4	19.7	
9.5	6.0	39.3	
9.5	44.3	39.0	
9.3	46.1	27.0	
9.2	47 9.5	33.7	
8.5	19.6	42.5	B
8.5	25.5	6.0	B
7.3	44.5	53.3	M
10	49.1	8.7	
9.0	50.5	54.9	M
9.3	54.5	57.6	
9.4	48 11.6	8.0	
9.2	16.0	31.1	
9.1	53.6	10.7	
9.5	49 1.7	23.0	
9.2	3.1	36.5	M
10	33.0	47.7	
10	35.6	39.3	
9.3	50.1	29.5	
9.5	51.2	26.1	
9.0	52.7	7.6	
9.3	53.1	49.7	
8.7	59.4	43.4	A
9.5	50 9.0	58.2	
9.6	14.7	32.7	
9.7	16.7	34.1	
9.0	22.2	7.8	A
9.3	56.1	30.4	
7.0	58.0	45.5	B
8.0	51 1.2	4.5	A
8.5	20.6	37.7	B
9.8	26.8	25.3	
9.3	34.8	23.5	
9.4	36.2	14.5	
9.5	43.1	49.6	
8.8	45.2	7.8	
10	48.8	20.3	
9.5	51.0	2.0	
9.7	52 0.3	17.9	
9.6	13.6	57.0	
9.2	24.6	1.1	
9.8	28.2	26.1	
9.7	46.0	15.2	
9.2	53 17.6	24.2	
9.7	24.2	25.8	
9.6	28.0	34.2	
9.0	40.2	34.8	M
9.0	41.6	45.0	
9.0	54 0.5	19.2	
10	2.2	54.3	
9.5	14.1	41.4	
9.5	23.4	28.7	
9.8	24.1	40.4	
9.2	33.3	24.6	

5181—5240

m	18h—19h m s	—18° ′	
9.3	54 48.7	9.4	
9.5	52.7	31.5	
9.0	57.0	16.5	
9.1	58.5	53.3	
9.8	55 9.1	11.8	
9.5	29.0	47.2	
9.5	45.4	58.0	
9.8	52.7	7.8	
9.5	56 3.4	35.7	
9.8	4.2	1.9	
8.5	18.0	54.9	A
9.4	19.5	58.4	
8.3	20.9	0.6	A
9.5	38.1	58.4	
9.0	45.8	30.5	M
9.0	57 4.5	19.3	
9.5	10.5	20.0	
9.8	13.8	8.1	
9.3	17.1	14.0	
9.8	24.3	5.0	
9.0	35.0	22.6	M
9.6	37.7	35.0	
9.8	41.7	8.8	
9.0	58 24.7	9.2	
9.8	35.1	48.5	
6.5	39.1	57.4	M
9.8	40.2	11.9	
9.0	48.8	4.7	
9.5	51.3	28.6	
9.5	53.0	5.2	
9.1	59 9.1	57.0	WC
9.5	13.1	54.1	
9.8	31.5	22.9	
9.5	40.3	9.2	
9.5	48.2	34.8	
9.8	50.9	59.9	
10	0 14.7	4.3	
9.5	26.9	9.0	
7.8	28.6	54.6	A
9.2	30.3	22.7	
9.3	37.9	32.7	
9.0	41.7	43.0	A
9.5	46.0	1.7	
9.5	55.7	34.0	
9.4	55.9	41.4	
9.5	56.3	20.7	
9.2	1 5.3	57.3	A
9.2	16.9	54.4	A
9.1	24.3	8.2	
9.5	34.8	21.7	
9.5	35.2	48.8	
9.5	42.0	24.7	
10	44.3	54.4	
9.5	51.2	40.5	
9.6	2 17.2	41.9	
9.9	30.1	5.5	
9.6	41.4	3.5	
9.0	48.2	30.5	
9.4	53.9	50.9	
9.1	3 8.6	26.8	WZ

5241—5300

m	19h m s	—18° ′	
10	3 10.3	53.6	
9.3	15.4	53.5	
9.5	21.5	24.7	
9.1	22.1	18.0	
9.3	27.9	28.8	
9.1	49.6	18.6	
9.4	58.6	30.1	
9.8	4 5.0	0.3	
9.2	10.2	39.8	
9.1	19.2	17.1	
9.2	53.6	48.8	
9.5	55.2	39.2	
9.5	56.5	13.1	
9.7	56.5	17.0	
9.1	59.0	14.1	
9.8	5 17.6	55.7	
9.4	31.2	34.9	
9.4	33.7	47.2	
9.5	42.0	35.6	
9.1	43.1	17.9	
9.7	51.0	46.1	
7.8	55.9	8.6	M
9.5	6 3.5	0.7	
9.1	4.6	23.5	
9.5	5.9	3.6	
8.3	6.1	17.5	A
9.0	22.2	45.1	WZ
9.5	25.9	8.5	
9.8	29.3	13.2	
9.5	48.7	15.8	
9.5	7 4.0	1.7	
9.5	4.1	33.7	
9.2	6.6	35.4	
9.4	17.7	55.6	
9.8	22.7	34.0	
8.5	41.8	54.0	B
9.8	42.8	0.7	
9.5	50.2	10.2	
9.5	52.6	42.1	
9.1	52.9	12.9	
9.1	55.7	58.1	
9.8	8 7.8	20.5	
9.3	25.9	30.1	
9.5	27.7	55.7	
10	29.7	23.0	
9.5	43.0	7.0	
9.5	51.2	23.4	
9.5	52.8	52.6	
8.7	58.7	50.5	M
8.5	9 5.5	4.7	
8.0	12.7	10.2	WC
9.9	17.6	43.1	
9.0	19.8	16.9	
9.5	20.9	30.2	
9.3	27.8	8.2	
9.0	42.1	27.8	
9.0	53.5	43.0	
8.0	10 2.6	57.0	A
8.5	14.4	59.2	A
9.1	28.2	0.7	

5301—5360				5361—5420				5421—5480				5481—5540				5541—5600			
	19h	—18°			19h	—18°			19h	—18°			19h	—18°			19h	—18°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.8	10 32.5	11.0	A	9.0	17 21.0	35.9		9.5	26 25.9	20.4		9.8	38 8.1	17.4		9.5	48 55.8	40.0	
9.4	38.3	15.4		9.3	22.6	38.9		9.1	38.6	53.1		9.5	30.9	22.3		9.4	49 22.5	15.0	
9.7	50.4	31.1		9.5	18 3.9	56.0		9.5	42.3	9.9		9.3	50.6	42.6		9.7	36.3	39.2	
9.8	11 20.7	19.9		10	8.6	47.4		9.6	27 3.6	52.0		9.3	53.1	28.6		8.5	41.3	40.4	A
9.8	28.8	54.7		9.5	25.1	37.0		9.5	6.3	10.2		9.1	55.5	46.2		9.1	55.1	28.8	
9.8	30.2	22.5		9.3	29.8	23.8		9.3	9.6	52.0		9.4	39 16.4	57.1		10	55.3	20.6	
9.2	45.4	26.5		9.0	34.9	20.1	M	9.5	41.1	29.2		8.1	29.0	45.4	A	9.5	57.4	7.2	
9.5	58.6	27.7		9.7	38.9	28.7		9.5	45.2	31.7		9.1	29.4	23.0	A	9.6	50 6.0	35.4	
9.4	12 8.3	46.3		9.5	40.6	25.4		9.5	28 6.6	50.5		9.5	39.2	29.6		8.3	11.3	45.9	A
10	15.5	45.0		9.8	50.5	57.7		9.0	19.3	25.2		8.6	39.9	59.8	M	8.9	28.3	35.3	
9.2	21.9	28.1		9.5	52.7	9.2		9.4	30.5	18.9		10	51.2	45.2		9.3	30.2	44.1	
9.2	25.5	9.4		9.5	54.4	11.4		5.4	38.3	32.8	A	10	52.1	34.3		9.5	31.8	22.5	
9.1	25.9	16.9		7.3	19 13.6	38.1	A	9.6	29 20.3	42.8		9.8	40 9.9	33.3		8.0	41.6	20.7	A
9.8	36.1	5.3		9.3	23.9	27.1		9.6	21.9	8.1		9.5	19.0	11.6		9.3	45.8	36.1	
8.5	41.8	46.8	A	9.5	39.0	25.3		9.6	50.4	55.7		9.7	21.5	8.4		9.5	51 3.1	13.7	
8.3	47.2	54.8	A	7.0	39.4	38.7	A	9.0	30 1.7	27.2	M	9.5	34.3	28.3		9.5	13.4	27.3	
9.5	55.0	37.2		9.5	20 0.1	20.0		9.8	6.8	19.1		9.5	40.6	45.9		9.0	14.2	1.0	
9.4	13 2.3	55.3		8.8	3.5	0.8	A	9.5	10.9	55.6		10	56.8	41.1		9.5	21.3	36.8	
9.4	3.1	46.0		9.5	5.2	5.4		9.8	24.6	16.7		9.3	41 0.9	42.9		9.3	52 1.6	9.6	
9.4	8.5	10.8		8.5	10.7	7.7	A	9.3	32.0	37.3		9.7	14.2	42.6		9.9	13.9	56.9	
9.3	12.7	19.1		9.0	39.6	21.7	M	9.5	43.9	55.2		9.4	17.0	7.4		9.3	18.5	20.6	
4.0	15.3	6.9	A	9.8	46.0	29.1		9.5	58.4	48.0		9.5	32.8	27.3		9.7	20.4	30.5	
9.5	20.1	53.9		9.8	46.1	42.2		9.6	59.0	39.8		8.8	46.2	12.7	A	8.3	21.3	40.8	A
9.2	20.9	18.4		9.1	50.7	17.3	A	9.6	31 17.8	59.9		8.0	51.4	18.7	A	9.0	23.3	20.9	A
6.4	23.6	34.3	L	9.7	21 1.1	42.8		9.8	22.0	47.6		9.8	42 7.9	53.6		10	49.3	26.8	
9.4	28.1	1.5		9.2	19.2	19.4	A	9.7	28.0	29.2		9.5	51.2	29.6		9.5	50.3	41.1	
9.5	30.3	51.0		9.2	19.6	32.0		8.0	52.3	13.3	A	9.5	53.5	18.7		9.7	57.8	27.7	
9.5	33.8	13.6		9.0	21.1	22.3		8.0	53.2	38.6	M	9.0	57.6	40.6		9.6	53 4.9	27.9	
9.8	39.5	14.1		7.7	43.7	32.4	A	9.5	56.4	54.9		9.3	43 14.4	28.5		9.4	14.4	3.0	
9.1	49.0	33.1		9.5	45.7	44.0		9.5	32 20.2	30.8		10	45.0	1.9		9.0	39.1	17.5	
9.0	50.0	40.1		9.0	55.5	51.9		9.3	25.7	29.3		9.3	57.7	21.3		9.5	42.0	53.4	
9.0	14 13.6	50.2	WZ	10	55.6	50.7		9.4	32.5	25.2		9.8	44 11.0	34.0		9.4	44.7	1.9	
9.6	24.1	26.2		9.8	59.3	14.7		9.5	54.3	23.4		8.5	11.4	42.4	A	9.8	54 3.8	40.4	
9.8	26.2	27.3		9.1	22 3.4	27.4		9.8	33 12.6	31.3		9.4	15.0	42.9		8.7	11.1	18.1	A
8.5	29.4	15.5	A	8.9	8.0	31.3	B	9.5	19.4	10.4		9.1	15.3	0.5		9.0	25.6	37.4	
9.8	50.6	29.2		7.5	13.7	36.9	B	9.0	34.4	41.6	M	9.6	22.3	5.6		8.5	27.3	34.4	A
9.5	53.6	44.5		9.3	37.7	43.6		8.8	43.9	19.1	M	9.5	41.9	34.8		9.0	28.8	37.1	
9.0	15 0.4	16.0	A	9.6	41.7	39.7		8.9	34 2.4	51.4		9.3	43.2	21.7		7.3	33.2	56.4	M
9.0	1.8	15.8	A	9.5	43.3	12.5		9.5	17.4	19.6		9.8	50.0	15.5		10	43.3	26.5	
9.0	3.9	16.4	A	9.5	50.7	23.9		8.3	26.9	32.2	A	8.5	45 1.9	16.7	A	9.5	46.9	55.7	
8.5	4.2	7.8	A	9.5	57.1	47.0		9.5	30.2	30.7		9.5	26.7	28.4		7.5	52.4	38.2	A
9.0	24.0	46.2		9.6	23 3.2	42.0		9.0	32.0	51.8	A	9.5	33.5	19.6		9.5	55 16.3	41.2	
9.4	36.4	41.2		9.5	16.7	44.5		9.8	35 21.7	9.5		10	38.3	5.2		9.5	43.2	52.7	
9.5	40.6	38.5		8.3	30.6	57.5	B	9.8	34.8	59.1		9.0	39.7	29.3	WZ	9.2	45.1	4.7	
9.5	44.2	10.3		9.6	41.2	26.6		10	36 0.8	3.8		9.4	50.2	33.5		9.8	56 31.7	25.7	
8.5	48.7	3.9	A	10	49.0	7.3		9.8	5.7	9.5		9.5	46 14.1	49.0		8.9	38.1	11.4	
9.5	54.8	7.5		9.3	57.5	32.3		9.8	6.6	35.0		9.4	25.2	46.2		9.5	42.7	59.4	
9.0	55.2	51.5		9.7	24 0.8	9.1		9.8	20.6	35.0		9.5	40.2	14.6		8.9	57 0.0	24.3	
10	57.6	42.4		10	21.2	13.2		8.5	21.9	52.4	A	9.4	58.0	49.8		9.2	8.1	15.6	
9.3	16 8.2	13.0		9.9	32.7	36.8		8.3	37.6	29.8	A	10	47 8.2	41.8		8.0	16.7	6.6	WZ
8.0	22.7	53.2	A	9.3	25 0.4	3.1		9.0	37.6	23.5		9.8	19.5	21.1		9.7	51.3	51.6	
9.3	27.4	32.8		9.2	2.2	27.0		9.5	37 5.0	48.4		9.7	51.7	43.4		9.8	58 3.7	24.9	
9.5	30.1	14.9		8.2	7.6	55.1	A	9.1	7.2	36.5		9.8	57.8	12.5		8.0	10.4	43.0	B
9.0	31.4	18.7		9.5	9.0	55.4		9.3	12.0	6.1		9.5	48 4.8	29.3		9.5	20.2	51.0	
9.0	35.5	41.2		9.3	12.8	44.6		9.5	27.5	39.7		9.1	5.3	27.3		9.1	26.6	0.5	
7.2	40.4	50.1	A	9.5	41.9	0.5		9.1	44.3	58.9		8.9	19.1	18.0	A	9.5	29.1	11.7	
9.5	40.9	54.9		8.8	49.8	11.7	R	9.1	48.6	10.1		8.5	26.2	7.4	A	9.5	30.5	27.6	
10	17 10.1	17.0		9.5	54.3	4.1		9.0	54.4	22.7	A	8.8	26.7	38.1	A	8.8	38.6	14.1	A
9.5	11.4	51.3		8.9	26 9.4	29.1	A	9.5	38 2.2	21.2		8.5	36.5	44.5	A	10	54.3	47.2	
9.3	18.6	35.6		8.7	18.4	24.6	A	9.1	2.3	30.2	A	9.4	36.6	52.5		10	59.1	58.5	

5457: 43°17 19′19″.7 B_1, Ep. 1883.65

5488: 29°31 22′12″.6 B_1, Ep. 1883.65

5601—5660

m	19h—20h m	s	—18° ′	
10	59	2.4	40.6	
9.1		19.0	7.4	
9.1		25.9	19.5	WC
9.0		50.0	39.8	A
9.7	0	5.3	48.2	
9.4		14.7	12.4	
8.7		27.9	26.6	WZ
9.5		58.6	16.5	
8.0	1	21.4	45.8	A
9.9		24.1	26.5	
9.5		24.9	7.3	
10	2	16.4	27.7	
9.5		35.3	49.9	
9.3		48.9	36.6	
8.8		57.2	14.6	A
9.3	3	8.8	59.6	
9.5		25.9	42.3	
7.8		55.1	34.3	A
8.5	4	0.9	44.5	A
9.4		32.7	21.5	
9.3	5	9.0	41.3	
8.8		13.5	48.2	A
8.5		21.4	50.4	A
8.0		40.2	6.5	M
9.2		53.0	34.0	
7.8	6	8.3	31.4	A
9.3		15.5	39.0	
9.8		38.5	48.4	
9.5		51.0	7.7	
9.1	7	5.0	43.3	WZ
10		14.0	52.7	
9.3		37.0	6.0	
9.6	8	8.2	7.7	
9.5		11.7	23.7	
9.1		16.3	51.0	
9.0		36.0	28.6	
7.2		40.4	52.2	B
9.1	9	28.0	29.7	
9.2		35.2	15.9	
8.5		38.1	39.1	A
9.2		39.0	7.4	
9.5		41.0	4.3	
7.5		41.6	42.2	A
8.8	10	7.2	0.2	
9.0		25.8	46.5	A
7.8		26.2	18.1	A
9.5		40.6	48.6	
9.5		58.6	48.5	
9.1		58.8	54.6	
10	11	39.8	7.8	
7.5	12	34.4	36.2	A
9.0		37.5	55.9	
7.5		41.5	46.6	WZ
9.3	13	13.1	4.3	
9.8		31.7	35.8	
9.4		45.1	47.8	
9.8		55.0	59.7	
9.5	14	9.3	17.4	WZ
9.3		39.1	3.9	
7.5		48.9	47.9	A

5661—5720

m	20h m	s	—18° ′	
9.7	14	52.6	8.8	
9.5	15	1.9	33.2	
8.7		15.7	40.4	A
9.3		36.8	34.6	
9.5		42.2	48.2	
9.7		45.7	39.8	
9.6		49.2	37.3	
9.0		54.1	49.8	
9.8	16	19.3	9.0	
9.8		25.0	57.4	
9.0		30.4	2.5	
9.0		41.8	18.7	A
9.2		42.3	20.9	
9.8		50.1	46.7	
9.4	17	17.0	20.1	
9.4		19.0	23.2	
9.2		21.3	10.9	
9.0		21.8	13.6	
9.5		21.8	9.6	
8.0		35.1	57.2	B
8.3	18	6.1	49.7	B
9.4		12.8	18.1	
9.5		37.8	42.0	
8.5		44.1	15.1	
5.4	19	0.7	40.8	L
8.8		33.6	31.7	
9.0		58.9	53.7	A
8.9	20	7.4	27.5	
5.1		35.0	17.2	L
9.5		37.1	28.6	
7.3		44.0	20.8	A
9.3	21	16.1	42.1	
10		27.2	47.8	
9.8		34.0	13.3	
9.5		45.5	1.3	
9.5		46.1	20.3	
9.8		46.7	54.3	
9.4		49.6	24.6	
9.1		59.2	30.8	
9.2	22	28.0	42.7	
9.7		30.1	38.5	
9.2		47.3	46.4	
9.8		51.2	22.1	
9.3		59.6	22.7	
8.2	23	7.4	34.1	A
9.1		33.7	37.7	A
9.3	24	42.7	20.4	
9.1	25	20.6	53.4	WZ
10		31.0	54.9	
9.4		39.5	55.1	
9.7	26	13.2	25.0	
9.4		20.2	26.3	
9.2		57.3	45.8	WZ
8.5	27	8.8	16.4	A
9.8		13.9	5.0	
9.2		17.8	13.1	A
10		32.0	22.6	
9.1		38.8	27.7	A
9.7		50.0	58.4	
9.8	28	10.0	39.0	

5721—5780

m	20h m	s	—18° ′	
9.5	28	13.1	32.2	
9.6		17.4	1.9	
9.5		34.8	33.0	WZ
9.7		52.2	12.2	
10		59.9	10.4	
9.4	29	3.3	15.8	M
9.3		8.1	16.5	M
9.5		19.7	39.0	
9.4		26.0	3.5	
9.7		35.8	28.4	
9.4		55.5	0.3	
9.3	30	11.9	33.3	M
9.3		25.9	21.8	WZ
9.4		50.0	11.7	
9.5	31	0.1	57.1	
9.5		32.6	57.4	
10		44.3	15.5	
5.5		47.0	38.4	A
9.8		56.7	57.2	
9.7	32	0.2	33.8	
9.8		19.0	42.9	
9.8		38.3	50.2	
8.7		42.9	18.2	A
9.9		54.3	41.1	
9.4		59.0	11.6	
9.1	33	5.5	6.0	A
9.8		10.7	51.7	
8.8		13.3	29.2	A
9.0		14.8	8.6	A
8.4		44.1	23.6	A
9.5		45.5	46.2	
9.5		59.6	10.8	
9.5	34	23.9	46.0	
7.5		25.1	37.1	L
10		33.5	18.3	
9.7		37.3	24.0	
9.6		42.7	26.5	
9.9		45.8	29.6	
9.7	35	3.0	46.3	
9.7		8.5	16.9	
9.1		15.1	44.3	A
9.7		25.4	52.9	
9.3		40.0	14.9	WZ
9.5		44.4	13.8	
9.8		46.9	46.3	
10		57.8	40.9	
9.5	36	2.6	17.2	
9.6		4.0	22.0	
9.5		57.5	32.4	
9.6	37	11.2	32.0	
9.1		44.3	49.6	WZ
10	38	13.4	1.3	
9.7		19.1	28.4	
9.0		37.8	31.1	
9.3	39	17.6	53.4	
9.5		29.9	27.8	
9.5		40.6	54.7	
8.5	40	10.2	43.5	L
8.1		11.0	43.7	A
9.5		25.0	26.5	

5781—5840

m	20h m	s	—18° ′	
9.4	40	46.4	38.4	
9.0	41	4.8	45.2	A
6.7		6.1	33.9	A
9.3		31.9	38.7	
9.4		32.4	17.3	
9.5		32.5	7.5	
9.5		46.1	58.2	
9.1		53.5	38.5	
9.8		56.7	12.2	
8.8	42	35.3	46.4	A
9.4		47.1	32.4	
8.7		47.8	17.5	A
9.5	43	13.1	0.9	
9.6		13.6	30.5	
8.0		18.2	2.6	B
9.8		53.6	13.3	
9.8	44	4.3	3.0	
9.5		21.2	16.0	
9.6		22.4	47.5	
8.7		44.3	6.0	A
9.5	45	17.8	7.2	
9.3		18.9	26.1	
9.4		28.5	55.6	WZ
9.1	46	28.1	42.0	WZ
6.3		36.1	28.1	B
9.4		39.4	9.0	
9.5	47	6.2	59.6	
9.8		40.1	37.9	
10	48	30.4	17.6	
9.5		37.4	45.5	
9.1		45.9	4.3	R
9.5		53.5	40.1	
10		58.8	14.0	
9.8	49	0.1	53.5	
9.3		9.8	23.7	WZ
8.8		20.3	17.0	
9.6	50	8.7	32.5	
9.8		24.7	41.2	
8.8		53.2	25.3	WZ
9.8	51	26.5	22.8	
9.2		28.5	1.6	A
9.5		38.2	32.5	
9.4		39.4	57.5	
9.4		40.4	23.9	
9.3		41.5	55.0	
10		46.9	20.8	
9.5		52.5	11.0	
9.6		56.0	27.6	
9.0	52	25.5	13.3	A
9.5		27.9	30.7	
6.3		41.5	5.3	A
9.7		41.9	28.0	
9.5		42.2	16.3	
9.8	53	22.6	8.9	
9.5		29.9	30.1	
9.1		42.7	43.5	M
9.6		45.4	24.3	
9.7	54	15.0	4.4	
9.3		17.9	31.9	WZ
9.0		18.3	10.3	WZ

5841—5900

m	20h—21h m	s	—18° ′	
9.5	54	30.0	35.2	
9.1		47.4	58.9	
9.4		53.2	47.1	WZ
8.5	55	10.1	2.2	A
10		22.5	23.9	
9.5		22.6	16.0	
9.3		39.3	41.1	
9.1		46.2	43.1	
8.0		50.8	40.6	A
9.0		56.6	48.4	
8.7	56	11.6	6.0	A
9.8		31.0	17.7	
9.6		37.4	33.4	
9.8	57	13.6	4.5	
9.8		47.3	47.5	
9.8	58	0.1	30.2	
9.5		1.3	46.0	
9.8		59.2	4.5	
9.8	59	5.7	27.5	
8.2		24.6	33.8	WZ
9.6		30.4	47.9	
7.2		36.2	2.1	R
9.7		37.0	5.8	
9.5		45.6	7.1	
9.4		54.5	57.8	
9.4	0	14.6	46.8	
9.5		37.6	37.2	
9.7		45.1	11.7	
9.8	1	31.2	16.8	
9.5		31.5	59.4	
9.5	2	8.6	34.9	
9.5		12.3	36.4	
9.4		13.9	26.7	
10		19.1	35.5	
8.0		21.7	55.0	A
9.4		32.7	51.2	
9.4		36.2	49.6	
8.9		36.6	3.7	A
9.1	3	19.8	37.5	A
9.4		37.3	8.2	
9.5		39.4	47.6	
9.3		41.1	56.8	
9.1		53.2	47.6	A
9.4	4	26.8	59.2	
9.5		41.4	25.6	
8.3	5	39.8	9.2	R
9.4		46.2	36.8	
9.0		50.3	12.3	M
9.4	6	5.2	34.3	
9.4		11.8	43.3	
8.3		21.9	30.1	WZ
9.1		51.4	10.6	M
8.8		58.7	42.0	WZ
9.8	7	0.2	48.7	
9.5		7.8	39.1	
9.7		12.3	8.2	
10	8	1.9	13.3	
9.5		3.3	37.2	
9.7		58.4	57.2	
9.3	9	19.3	41.2	M

5607: 27ʰ79 26′39″0 B_1, Ep. 1883.65

5691: 43ʰ57 20′53″3 B_4, Ep. 1871.58

5901—5960					5961—6020					6021—6080					6081—6140					6141—6200				
	21h		−18°			21h		−18°			21h—22h		−18°			22h		−18°			22h		−18°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.4	9	24.8	42.3		9.5	25	47.7	28.7		9.8	43	39.9	27.1		9.8	3	16.0	16.1		8.8	25	16.2	10.6	A
9.1		35.3	46.8	A	9.0		47.8	30.0	WZ	9.7	44	5.3	34.8		9.1		51.3	41.0		8.2		32.2	30.8	B
5.8		48.0	35.2	A	9.2		58.9	13.6		9.7		8.9	7.8		9.4	4	21.8	50.3	A	9.8		50.8	15.1	
7.5	10	8.4	4.0	A	9.8	26	16.3	29.4		9.4		54.8	7.2		8.5		37.8	44.0	B	9.7		52.0	35.0	
9.1		26.5	8.4	A	9.2		28.2	27.0	WZ	9.0	45	29.4	14.0		9.3	5	4.0	7.7		8.8	26	41.3	15.4	A
9.5		39.9	51.0		10		35.1	39.7		9.7		48.1	35.3		9.5		39.2	3.4		8.8		51.4	53.1	A
9.8	11	6.4	31.0		9.6	27	23.8	29.2		9.5		57.8	2.8		9.2	6	39.9	27.5	M	9.5		58.5	41.2	
9.5		18.5	21.4		9.5		33.5	45.8		9.5	46	7.4	1.9		10	7	19.6	38.7		9.8	27	24.2	53.7	
9.7		35.4	36.8		9.5		59.9	39.5		8.5		12.6	15.6	M	9.8		20.6	33.0		9.3		31.3	33.9	
9.5		39.0	14.5		9.7	28	14.8	23.1		9.4	47	3.3	23.7		9.8		27.9	38.7		9.3		37.3	34.2	
9.4	12	8.1	24.1	WZ	9.3		24.4	48.6	WZ	9.4		10.3	22.3		9.6		41.4	41.5		8.7		39.1	0.3	A
9.4	13	13.8	44.4		9.5		27.8	31.0		9.0		21.3	55.6	M	9.3		43.6	13.4		8.5		47.0	33.3	A
9.2		27.9	31.5	WZ	9.4		29.9	36.7		9.6		36.5	44.5		9.4		47.8	51.5	M	8.1		51.3	22.3	B
10		55.1	4.0		9.7		33.7	9.6		9.7	48	15.2	55.5		9.3	8	15.7	14.3	A	6.5		59.4	12.4	A
9.6		55.5	23.1		9.5		33.9	21.1		9.4		29.4	7.8		9.6		39.9	42.1		9.7	28	8.1	37.4	
9.2	14	9.0	34.4		9.4		42.0	8.3		9.5		40.4	18.9		8.0	9	37.7	52.6	A	9.3		20.4	14.4	A
10		25.3	39.4		9.5		48.9	3.6		6.8		46.3	34.8	A	9.9		38.0	41.9		9.5		31.9	55.1	
9.2		28.1	7.4		9.2		50.4	7.3		9.2		48.8	12.3		9.6	10	5.0	55.5		9.8		37.3	12.7	
9.4		28.3	11.5		9.8	29	5.9	8.7		9.7	49	6.9	50.6		9.3		11.5	42.5	R	8.8		42.8	53.3	A
9.8		41.0	24.7		9.3		50.5	10.5		10		33.9	35.1		9.8		38.3	34.7		10	30	31.9	24.5	
9.4	15	10.0	20.3		9.2		55.0	58.8	A	9.5		36.2	47.6		9.6	11	12.8	30.4		9.5		32.8	51.5	
9.0		17.6	54.0	A	10	30	5.6	48.0		8.8	50	6.5	18.3	A	9.3		54.1	58.1		9.5	31	12.5	46.2	
9.7		19.5	3.1		9.8		15.2	18.0		9.6		7.0	12.7		8.5	12	4.3	11.2	R	8.2		18.7	32.6	A
9.7		50.1	9.0		9.4		46.0	2.4		9.5		47.1	0.9		9.5		32.4	35.1		10		38.4	1.0	
9.8	16	3.9	49.6		9.3	31	18.9	0.8		9.3		53.6	5.8		9.8	13	8.9	4.2		9.3		53.0	9.1	
9.4		12.6	54.1		9.1		28.5	46.0	WZ	9.2	51	9.7	2.0		9.6		54.6	48.9		9.6		53.8	35.6	
9.5		24.0	33.8		9.6		36.4	17.5		8.0		28.8	40.9	A	9.5		57.2	46.7		9.0	32	9.6	42.6	
9.8		31.4	38.2		9.6		50.6	41.2		9.2		36.5	53.8	A	9.6	14	2.8	31.4		8.7		14.7	33.7	A
10		55.5	35.6		9.2	32	7.2	35.2		9.5		37.2	48.8		9.2		10.9	9.6		9.6		54.5	20.4	
9.3	17	23.1	49.1		9.5		9.2	44.8		9.2		37.8	44.6		9.5		50.7	46.9		9.5	33	16.1	5.2	
9.5		30.1	52.0		9.5		29.5	32.1		9.8	52	11.1	17.3		10	15	46.0	21.4		9.6		44.7	50.9	
10		43.6	0.0		8.9		30.9	15.0	WZ	7.8		21.3	4.5	A	9.8	16	2.4	31.9		9.4		51.5	27.2	
10		56.0	25.8		9.6	33	4.5	7.3		8.2	53	20.6	12.8	A	9.6		17.1	56.8		9.1		53.8	26.8	
9.4	18	4.9	32.8	R	9.1		8.9	12.5	M	9.6		33.1	7.4	A	8.0		41.3	19.5	B	8.7	35	1.6	8.5	A
8.8		9.2	46.2	WZ	9.6	34	21.5	2.9		8.9		48.7	8.8	A	9.1		45.6	42.1		9.3		14.4	48.8	
8.8		26.9	30.2	A	9.1		49.1	58.2	A	6.8	54	12.5	35.8	A	9.3	17	35.0	8.6		8.5		26.6	36.3	
9.8		30.6	0.2		9.5	35	19.4	24.8		9.8		15.2	23.3		9.8		38.4	46.3		9.8		33.2	28.1	
9.4		47.6	4.6		8.2		30.0	2.8	A	9.4		47.3	2.1		8.5	18	17.0	15.3		8.3	36	1.1	21.5	
9.3		51.1	40.8	R	9.5		48.5	44.7		8.7		59.7	7.5	A	8.5		25.0	44.3	A	9.2		2.8	52.6	
9.3	19	20.4	22.5		9.1		57.2	50.6	A	9.8	55	31.0	43.1		9.0		25.1	4.3		8.9		4.8	16.9	A
9.5		21.2	59.7		9.2	36	27.5	19.8	A	8.2	56	13.2	30.6	WZ	8.9		36.5	15.3		9.5		25.2	52.6	
9.5		42.9	22.3		9.8	37	22.0	25.0		10		18.7	14.2		9.1		39.6	27.3	A	9.9		31.0	43.4	
9.6	21	18.0	36.6		8.2		48.2	38.9	A	9.5		47.8	15.3	A	9.7		46.4	11.3		9.7		38.7	3.3	
9.8		20.0	50.8		9.5		54.7	50.5		9.5		50.3	16.4		9.4		56.5	22.0		9.8		54.6	12.4	
10		23.2	44.3		9.3	38	2.6	14.2		9.1	57	18.7	23.9	A	9.8	19	4.5	9.9		9.4	38	9.2	15.8	
9.0		44.2	58.6	A	9.5		14.1	49.7		9.8		19.9	30.1		9.0		6.6	31.2	A	9.2		15.5	51.9	A
9.5	22	18.7	43.0		7.5		25.0	35.0	A	9.4		46.4	5.5		10		27.0	34.1		9.2		17.4	2.6	
9.5		26.7	27.0		8.3		37.4	49.0	A	9.4		48.9	26.1		9.2		32.4	24.5	A	10		55.9	44.9	
9.8		35.2	50.4		9.5	39	2.7	53.0		9.0		56.1	47.9		8.0		57.8	0.6	A	9.8	39	28.4	14.6	
10		36.0	46.4		9.8		9.1	18.0		9.2	58	23.6	33.9		9.0	20	11.7	52.4		9.2		29.9	35.8	
8.9		55.7	18.1		9.8		21.5	52.4		9.5	59	2.3	27.8		9.9		37.3	43.9		9.7		37.9	12.5	
9.3	23	2.3	44.6		9.4		26.0	31.7		8.5		55.1	38.1	A	9.8		51.6	26.1		6.9		38.6	18.6	B
9.1		6.8	46.2	WZ	7.7		42.0	52.8	A	9.6		57.4	5.4		9.1		59.7	29.1		8.8		41.3	20.6	M
9.8		12.2	11.9		9.3	40	14.2	17.1		9.4	0	10.4	32.6		9.5	22	44.9	41.5		8.3		49.2	51.0	B
9.7		23.9	34.0		9.9		39.1	7.4		7.8		17.0	32.0	A	8.8		47.8	30.1		8.9	40	7.5	54.5	
9.5		51.8	34.1		9.5	42	8.9	25.8		9.1	1	0.0	36.5	A	9.3		50.4	23.4		8.0		49.8	1.0	A
9.2	24	0.8	52.4	WZ	9.4		11.8	52.2	WZ	9.0		58.7	36.8		9.5	23	59.7	15.2		9.5	41	40.2	35.1	
9.1		52.9	12.6		9.8		26.1	4.3		8.6	2	8.7	42.2	A	9.0	24	18.6	23.4	A	9.6		55.3	17.4	
9.4		57.8	33.7		9.5		32.4	33.9		9.4		28.0	11.2		10		58.2	21.8		9.1	42	15.6	48.2	A
9.1	25	43.5	36.4		9.1		37.3	41.4	R	9.8		42.0	14.6		7.8	25	13.3	14.8	A	9.8		30.8	3.7	

6201—6240

	22h	—18°	
m	m s	′	
9.5	42 36.3	30.4	
9.8	58.8	33.5	
8.8	43 7.2	34.9	A
9.8	25.3	28.5	
9.3	42.6	32.9	
10	44 46.9	5.9	
9.7	59.7	48.1	
9.5	45 7.9	29.1	
9.1	32.6	37.9	M
9.7	48.4	1.4	
9.4	52.4	45.7	
9.0	46 6.7	2.8	A
8.7	12.9	49.4	A
9.7	51.4	34.4	
9.2	47 21.0	14.6	
9.4	28.5	17.0	
8.8	30.6	1.0	
9.8	48 19.9	27.0	
9.5	25.3	24.6	
9.4	33.8	42.1	
9.4	52.3	44.3	
10	49 44.7	8.4	
10	52.9	23.5	
9.2	50 19.6	16.1	
8.1	26.2	27.7	A
9.7	30.5	28.0	
9.9	57.1	33.4	
10	51 23.2	5.5	
9.5	28.9	22.0	
9.8	59.9	41.0	
9.8	52 0.3	9.1	
9.5	27.7	23.3	
9.4	57.6	53.9	
9.4	59.0	22.0	
10	53 40.8	21.5	
9.2	48.0	32.1	
9.2	54 0.2	59.8	A
9.5	4.3	31.5	
9.2	26.6	43.0	
9.5	31.3	9.2	

6241—6280

	22h—23h	—18°	
m	m s	′	
10	55 13.0	45.7	
10	13.4	34.7	
8.8	15.1	5.8	WZ
9.8	15.8	23.2	
9.7	2[illegible].8	10.0	
9.7	34.4	17.5	
9.4	51.7	49.1	
9.9	56 12.9	12.6	
10	32.4	7.5	
9.1	41.5	4.4	
9.3	54.2	41.1	
10	58 21.0	10.5	
9.5	59 27.1	4.7	
9.6	38.5	58.3	
9.6	0 36.2	30.[illegible]	
9.5	43.9	52.4	
8.5	1 13.1	13.2	A
8.5	2 11.1	19.6	A
8.6	25.6	13.8	A
8.7	34.9	25.6	A
9.5	54.5	16.9	
8.5	3 0.4	20.6	B
9.8	17.2	30.5	
9.8	28.3	0.8	
9.6	48.3	41.7	
9.3	4 20.5	50.2	
8.9	44.2	8.7	A
9.0	55.8	6.7	A
9.4	5 12.5	39.0	
9.5	49.7	26.2	
8.6	51.4	9.4	A
9.3	6 8.8	15.9	
9.6	11.8	10.7	
9.0	40.8	9.9	A
9.4	8 20.2	48.4	
8.9	34.2	31.5	WZ
10	37.4	16.1	
9.4	9 6.7	43.1	
8.0	12.7	4.1	A
7.8	29.8	57.2	A

6281—6320

	23h	—18°	
m	m s	′	
9.5	9 56.0	12.5	
9.7	10 0.7	19.6	
6.0	11 45.4	51.9	B
9.2	52.5	23.9	
9.4	12 43.2	31.5	
9.7	46.3	29.7	
9.5	49.3	0.7	
9.3	13 12.8	18.6	
8.5	19.3	22.6	A
10	31.6	51.6	
8.8	44.9	18.4	A
9.2	14 18.8	14.1	
9.5	16 4.9	7.5	
9.2	11.8	18.0	
7.8	15.4	34.8	A
9.8	16.6	8.5	
8.7	28.4	29.7	B
10	45.1	43.7	
9.2	48.5	6.9	A
8.5	56.1	25.4	B
9.5	17 15.4	25.3	
9.5	19.2	55.4	
10	23.0	10.7	
8.3	28.7	25.4	A
8.4	35.0	53.0	A
9.1	49.5	4.4	
9.5	18 27.1	55.2	
9.6	19 22.7	53.8	
9.4	36.2	43.5	
9.0	45.6	23.2	
9.5	20 1.1	3.2	
9.5	4.7	46.8	
9.3	17.7	1.0	
9.6	21 6.1	11.1	
9.7	17.9	21.6	
9.2	29.3	53.6	
8.9	22 16.2	4.1	A
9.8	33.2	29.3	
9.2	33.2	4.8	
9.5	44.9	56.2	

6321—6360

	23h	—18°	
m	m s	′	
8.9	23 21.3	44.6	A
9.2	28.7	12.4	
9.9	39.5	59.0	
10	24 12.9	37.5	
9.7	14.0	15.4	
9.9	16.7	33.4	
9.9	42.8	19.6	
7.8	25 1.8	24.7	WZ
9.5	2.9	36.1	
8.2	8.8	36.4	A
8.5	17.0	51.3	WZ
9.2	31.9	42.8	
8.9	41.4	25.8	
9.5	26 6.9	5.5	
9.8	13.9	49.4	
10	22.4	15.5	
8.9	34.4	41.5	A
9.6	39.4	6.1	
8.8	27 13.5	30.6	
9.9	28 45.0	34.4	
9.2	52.6	42.0	
8.8	29 9.1	2.3	A
9.5	14.1	38.6	
9.5	18.0	33.8	
8.3	28.8	21.7	B
9.4	38.1	41.9	
10	30 20.4	47.8	
9.7	39.7	48.9	
9.6	49.0	31.8	
9.8	31 7.3	9.0	
9.8	39.2	1.9	
9.6	46.6	39.3	
8.4	47.1	35.5	A
9.4	32 3.1	14.9	
9.8	27.2	57.5	
8.3	33 32.3	19.8	A
5.3	34 3.3	49.5	L
4.3	13.7	36.9	A
8.5	14.4	34.8	A
9.4	17.9	56.0	

6361—6400

	23h	—18°	
m	m s	′	
9.5	34 35.2	11.3	
9.7	35 16.7	12.0	
9.6	36 50.4	51.4	
9.3	37 0.3	25.0	
9.8	3.4	43.5	
9.2	9.6	41.3	B
9.8	38 8.4	32.8	
9.8	23.0	46.9	
9.4	23.9	35.9	
8.4	40 1.1	44.2	A
9.2	52.8	41.7	
9.3	41 10.3	52.7	
9.8	43.9	23.5	
9.8	42 13.9	35.3	
10	29.5	10.9	
9.8	35.7	28.8	
9.9	37.2	45.1	
8.6	42.6	10.8	WZ
9.3	59.3	56.4	
9.2	43 24.4	52.0	
9.0	25.7	12.8	
9.9	36.6	6.9	
8.9	44 4.0	40.2	WZ
9.6	21.4	47.2	
10	27.5	7.7	
9.5	33.0	2.3	
8.8	43.3	12.4	WZ
9.4	48.2	57.2	
8.2	50.5	49.6	A
9.8	58.7	9.0	
9.3	45 14.8	26.0	
9.8	46 7.0	29.3	
9.6	47 30.3	36.2	
9.2	38.0	25.2	
9.4	39.4	47.1	
9.7	43.5	47.8	
7.5	57.1	38.1	A
9.3	48 5.9	42.3	A
9.1	19.9	35.7	
9.4	23.2	34.1	

6401—6408

	23h	—18°	
m	m s	′	
9.3	48 35.9	23.4	
8.7	39.7	48.7	A
8.5	49 7.6	4.6	A
9.8	50 54.3	15.9	
9.2	59.0	2.4	A
9.5	51 26.1	27.2	
9.7	52 17.5	36.0	
9.6	27.5	35.9	

6409—6415

	23h	—18°	
m	m s	′	
8.4	52 38.7	49.2	A
9.2	49.7	59.0	
9.3	53 26.5	27.3	
10	55 3.4	50.0	
9.3	34.1	8.4	
9.5	56 2.0	6.4	
9.5	3.5	59.3	

6416—6422

	23h	—18°	
m	m s	′	
8.8	56 10.1	21.2	
4.7	18.0	8.2	A
9.1	28.1	32.5	
8.5	49.1	13.7	A
9.7	57 7.1	16.9	
8.7	31.0	59.2	B
9.8	38.9	53.9	

6423—6429

	23h	—18°	
m	m s	′	
9.6	58 0.8	22.2	
9.1	19.0	58.8	B
9.1	23.1	7.4	
7.5	58.9	50.5	A
9.0	59 13.5	26.3	
6.5	53.2	11.5	A
9.4	58.8	40.2	

Zone −19°

1—40					41—80					81—120					121—160					161—200				
	0h		−19°			0h		−19°			0h		−19°			0h		−19°			0h—1h		−19°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
10	0	13.6	10.0		9.9	14	18.2	9.6		8.2	28	1.4	13.3	A	9.8	40	29.1	13.5		9.6	55	11.0	49.4	
8.0		34.6	29.4	A	9.2		27.9	46.7		7.8		3.5	21.2	A	9.5		48.8	55.4		9.7		17.7	6.9	
9.5	1	34.8	41.5		9.4		28.8	10.8		9.7		21.2	52.2		9.3		57.3	53.0		9.5		36.2	16.4	
8.8		55.3	18.2	WZ	9.5		47.1	16.1		9.8		41.7	34.3		8.9	41	16.2	27.5		9.6		47.5	13.8	
9.4	2	47.3	40.3		9.5		49.1	41.2		8.5		44.4	33.7	A	10		20.3	44.5		9.4		50.5	51.6	
9.5		53.3	40.3		9.7	15	36.1	17.6		9.5		49.8	58.3		8.3		28.1	19.9	A	9.9	56	8.9	15.9	
8.0	3	34.1	22.7	A	10		52.0	57.4		9.2	29	24.1	38.8	A	9.0	42	2.7	47.4		9.5		32.0	44.0	
9.2		43.1	19.7		7.5	16	4.4	41.2	A	9.6		34.1	43.3		9.8		4.8	53.5		8.5		52.6	20.9	A
9.1		54.6	57.8		9.3		29.8	6.0		10	30	2.2	34.1		9.2		26.8	27.8	A	9.3		59.5	30.4	A
8.8	4	5.3	30.7		9.1		45.4	53.5		9.8		50.8	12.5		9.7	43	1.2	57.8		9.6		59.6	9.6	
7.3		11.2	24.2	B	10	17	4.5	40.9		10	31	17.4	45.0		9.9		1.9	49.2		8.5	57	34.2	5.8	B
9.8		19.5	36.9		9.2		28.6	49.0		8.8		32.3	16.7	WZ	9.5		11.9	52.4		9.4	58	1.1	46.5	
9.8		26.7	49.5		7.3		29.9	16.0	A	8.0		35.2	40.0		8.6		27.2	17.8	A	10		4.1	9.1	
9.0	5	2.2	20.3	A	8.8		37.1	10.6	A	9.5	32	3.3	47.8		9.5		31.9	53.0		9.6		18.0	12.0	
9.4		37.4	0.5		8.7	18	16.6	36.6	A	9.8		9.8	27.4		10		45.8	24.5		9.5		19.6	30.1	
9.3	6	4.5	14.9	B	9.3		17.8	40.4		9.1		52.0	21.1		9.5	44	18.4	45.0		10		28.1	34.2	
9.0		50.3	20.2	A	9.4		21.7	49.8		8.8		57.2	56.6		8.8		19.1	18.0	A	9.3		40.1	22.8	
9.2	7	0.1	16.1		7.0	19	2.6	29.6	A	9.5	33	17.5	59.5		9.8		25.0	50.7		8.7	59	2.2	36.6	A
9.0		5.2	54.8		9.1		13.9	41.2	A	9.8		30.4	29.2		9.0	45	26.0	47.8		9.5		48.3	5.3	A
9.0		5.9	14.3	A	9.5		17.7	54.2		9.8		32.9	39.0		8.5		33.9	22.2	A	8.9	0	20.6	55.2	A
5.0		16.2	43.8	L	9.1		55.7	52.7		9.2	34	24.4	36.8		10	47	16.5	31.0		9.8		21.3	52.5	
9.6		18.8	15.2		10	20	59.2	41.0		9.1	35	25.4	24.8	WZ	9.5		36.1	28.8		9.1		26.4	4.0	
9.0	8	30.1	45.3		10	21	32.8	16.1		9.5		27.4	23.0		8.0	48	37.8	18.9	B	9.8		54.2	45.2	
9.5		48.0	25.2		9.9	22	8.6	17.1		8.5		29.0	52.0		8.3		42.1	32.7	A	10	1	1.8	15.0	
8.8	9	7.3	3.6	A	8.5		37.8	50.3	A	9.3		47.4	59.1		9.3	49	24.1	39.2		9.0		12.7	43.5	
9.4		24.5	12.6		9.5		52.8	34.4		9.2	36	3.9	38.6		9.5	50	14.2	24.4		8.3		19.0	56.4	A
9.7		48.9	7.1		8.2		56.8	59.1	A	9.1		10.7	3.5		7.2		27.7	46.7	A	9.9		39.2	23.2	
9.9		57.4	6.5		7.8	23	18.8	25.0	A	9.8	37	1.8	19.4		10	51	1.7	43.5		9.5	2	6.5	4.8	
9.3	10	5.5	12.6		9.5		20.4	26.8		9.5		14.1	45.8		8.9		40.7	17.8	WZ	10		56.9	51.6	
7.0		11.2	51.1	A	10		58.4	45.5		9.5		15.3	21.2		9.2		51.8	35.7		9.5	3	8.3	23.4	
10		23.7	45.8		8.8		59.1	57.3		9.5		19.6	44.4		9.5	52	9.5	14.0		9.7		17.6	24.0	
9.9		40.2	31.7		10	24	28.3	32.3		9.2		20.9	13.8		10	53	12.8	18.0		9.5		27.4	27.1	
9.1		42.2	33.5		9.1		29.9	23.8		9.8		50.5	30.5		9.9		31.6	33.5		9.4		51.0	9.6	
9.5	11	43.9	0.8		7.0		47.0	1.0	A	9.4	38	19.8	56.0		9.5		42.9	44.3		10		54.6	58.0	
9.4		56.6	14.8		10	25	0.3	23.0		9.5	39	9.6	26.0		8.0		57.9	37.3	A	7.0		54.6	34.3	
9.6	12	38.3	50.0		9.0		25.5	29.1	WZ	9.0		37.4	5.7	A	9.3	54	6.6	59.7		9.0	4	29.3	40.8	
10	13	15.3	43.3		10	26	13.4	41.3		9.6		39.0	18.8		10		34.2	0.1		9.2		35.3	15.6	
9.5		16.6	26.3		9.5		32.0	10.1		8.7		45.1	41.9	A	9.2		40.1	20.6		9.4	5	5.6	34.1	
9.9		51.7	7.1		10	27	4.5	34.5		9.8		46.3	50.4		9.8		52.2	53.6		9.1	6	17.5	48.3	
9.6	14	10.0	41.6		8.9	28	1.0	0.1	WZ	9.8		58.4	21.9		9.6	55	2.4	14.2		8.9		22.9	55.9	A

201—260

m	1h m	s	−19°	
9.7	6	26.4	49.4	
10		47.5	44.1	
10		53.5	45.9	
9.6	7	1.4	20.4	
10		23.6	34.9	
9.7	8	6.7	58.2	
9.1		31.6	46.4	
8.2		37.5	10.6	
9.5		42.6	40.7	
9.3	9	9.1	25.8	
9.3	10	8.1	54.6	
9.0		12.7	37.5	A
9.3		14.8	50.2	
9.0		15.5	47.3	A
9.3		30.7	37.5	
9.1		37.7	30.7	A
9.8	11	19.3	32.2	
9.1		42.8	52.1	A
9.5	12	37.4	14.0	
9.6		50.6	19.5	
9.7	13	20.5	20.9	
9.3		33.9	1.5	
10		43.5	13.1	
9.1		53.6	3.9	
9.1	14	1.4	29.3	
9.8		28.5	1.2	
8.8		48.4	43.4	
8.5	15	24.0	33.8	
6.9		28.2	50.2	B
9.9		44.1	13.3	
9.8		44.9	42.8	
8.9		57.3	40.4	
9.5	16	16.1	22.5	
9.3		18.7	8.4	
8.7		20.1	11.5	
9.1		28.5	13.9	B
10		47.2	49.2	
9.1		55.0	38.6	A
9.5	17	20.7	50.5	
9.4		29.2	5.0	
9.3		38.9	30.8	
8.8	18	38.6	19.1	B
10	19	18.7	3.4	
9.4		31.8	5.4	
9.7		44.7	52.9	
8.7		59.8	5.8	A
9.4	20	0.2	22.7	
9.1		16.4	7.6	A
10		18.2	45.3	
9.6		43.1	15.2	
9.3	21	2.0	14.5	
9.5		19.2	31.5	
9.9		32.1	56.3	
9.7	22	28.7	15.7	
9.8		35.5	20.1	
9.4		52.5	30.6	
9.8	23	12.6	39.8	
9.2		21.7	30.5	
9.8		22.1	13.7	
9.3		22.5	24.0	

261—320

m	1h m	s	−19°	
9.8	23	22.8	48.0	
7.0	24	33.4	45.7	B
8.0		38.9	46.7	B
9.4	25	8.9	11.7	
8.2		16.0	18.6	
7.7		35.5	43.1	
9.5		45.4	28.0	
9.2		51.2	16.4	
7.5	26	4.3	54.1	B
8.4		6.8	38.9	
9.8		57.0	40.8	
9.9	27	9.4	31.4	
9.5		23.7	56.1	
8.3	28	8.6	13.9	A
10		9.5	37.0	
9.5	29	20.7	25.4	
10		35.8	26.9	
9.0	30	12.6	12.7	A
10		14.8	34.7	
9.6		34.0	50.6	
9.7		38.9	15.5	
9.0	31	46.8	26.0	A
9.9	32	14.0	49.7	
8.8		18.3	32.2	A
9.3		34.4	36.9	
9.0		36.7	9.5	
9.3		42.6	2.5	
9.4		44.6	59.1	
9.6	33	31.5	18.4	
9.9		36.9	41.4	
9.4	34	9.8	29.1	
7.5	35	4.6	55.4	A
10		55.6	25.2	
9.4	36	3.6	52.8	
10		12.4	29.2	
9.4		16.9	36.7	
9.6		22.4	26.0	
9.2		53.6	18.0	
9.4		59.1	55.4	
9.0	37	19.5	44.1	
9.1		29.2	23.7	
9.2		53.4	7.8	A
9.8	38	28.7	16.1	
9.9		31.8	26.8	
9.6		33.5	5.2	
10	39	7.4	38.9	
10		34.3	47.7	
9.8		36.1	28.5	
9.9		39.0	18.6	
9.4	40	0.3	9.8	
10		21.3	57.4	
9.8		26.8	6.9	
10		27.7	17.4	
9.6		56.6	25.4	
10	41	11.7	41.2	
9.0		26.6	24.2	
8.0		53.6	6.4	B
7.9	42	9.2	12.0	B
9.4		33.6	7.3	
9.0		33.8	44.1	

321—380

m	1h m	s	−19°	
8.6	42	46.8	39.2	A
9.2		49.6	20.9	
9.0		56.5	55.7	
9.7	44	19.3	27.1	
9.7		20.8	26.2	
8.7		33.5	59.8	A
9.9		54.4	32.0	
9.4	45	28.8	37.1	
10		31.0	55.9	
9.8	46	26.3	29.5	
9.5		58.0	28.2	
8.8		59.5	43.0	
9.1	47	20.0	29.8	
9.5	48	8.3	50.6	
9.4		9.0	34.1	
8.9		26.4	59.3	
9.7		42.3	37.4	
9.0		42.8	35.5	A
10		46.4	55.0	
10	49	12.5	35.4	
8.3		20.2	20.0	A
10		41.0	38.1	
9.8		49.3	38.5	
10		49.5	25.0	
9.5		57.8	25.9	
9.6	50	47.7	14.1	
9.5		51.8	49.1	
9.8	51	4.0	18.4	
10		17.8	10.2	
10		21.4	17.6	
10		35.2	48.0	
9.3		49.0	5.8	
10	52	14.2	36.0	
9.8		28.0	5.8	
10		37.9	55.7	
9.2	53	12.7	35.8	
9.5		16.1	28.8	
9.6		25.6	55.7	
10		39.8	48.9	
9.8		50.4	51.6	
9.4		52.6	4.7	
9.3		59.2	7.7	A
9.1	55	14.7	24.6	
9.0		25.3	35.8	
9.1	56	6.9	56.3	
10		13.3	25.1	
9.4		18.4	33.6	
9.5		26.9	31.6	
8.0		44.9	18.9	A
9.1		50.0	25.8	
9.0	57	11.4	37.2	
9.9		24.4	28.3	
9.4		29.9	28.3	
8.9		59.0	49.6	A
9.8	58	0.8	7.4	
9.7		18.1	57.5	
9.7		19.9	32.2	
9.7		28.3	50.3	
9.4		55.4	2.3	
9.5		55.4	39.6	

381—440

m	1h—2h m	s	−19°	
9.7	58	56.7	5.7	
9.5	59	2.1	17.3	
9.6		8.6	53.3	
9.3		26.1	48.8	
9.4		54.4	5.8	
6.3	0	0.1	49.2	A
9.1		17.8	41.9	
10		35.0	7.5	
8.7	1	5.-	3.3	A
8.3		7.6	36.2	A
10		27.1	27.5	
9.1		30.9	19.4	
9.0		30.9	9.4	A
10		38.0	58.1	
9.5		44.1	33.2	
9.4		56.7	35.2	
10	2	8.9	5.8	
9.4		41.8	1.9	A
9.7	3	37.6	17.1	
9.8		43.8	52.0	
8.9	4	9.5	13.4	
7.5		18.9	59.7	A
10		18.9	52.7	
9.8		19.0	33.1	
9.8		35.4	12.3	
7.2		42.7	39.2	A
9.3		46.7	28.7	
10	5	50.9	55.4	
9.1	6	27.0	19.6	
9.9		46.3	28.4	
9.8		50.4	37.2	
9.7		51.5	28.7	
9.8	8	1.7	1.7	
10		21.3	27.9	
9.1		35.1	17.6	
8.6	9	6.0	48.7	A
10		11.7	54.1	
9.8		38.1	54.4	
9.5	10	17.3	2.3	
9.2		32.0	47.5	
9.0	11	39.6	55.9	
9.8		44.2	52.1	
10	12	8.0	27.8	
9.2		16.5	32.7	
9.2		25.8	13.5	
8.5		35.5	14.4	A
7.8		53.0	48.7	A
9.8		53.3	57.8	
8.9	13	10.7	43.3	A
9.3		25.2	11.3	
9.5		42.4	6.3	
9.8	14	1.1	18.2	
10		20.2	44.0	
9.9		24.3	50.6	
9.4		37.5	57.4	
9.1		39.5	4.7	
9.6		44.0	18.3	
9.5	15	5.0	11.8	
9.8		11.4	59.6	
10		20.7	24.2	

441—500

m	2h m	s	−19°	
9.5	15	31.1	24.4	
9.7	16	2.6	58.8	
9.5		5.8	14.2	
6.3		7.5	0.6	A
10		58.7	18.6	
10	17	7.8	31.9	
9.9		15.7	11.9	
10		19.9	35.6	
10		22.7	18.4	
9.5		35.0	54.5	
9.7		49.5	2.4	
9.4	18	6.2	21.4	
9.1		40.1	15.0	
10		52.9	37.4	
8.9	19	43.5	44.6	A
9.9		57.4	35.7	
10	20	4.8	59.7	
9.1		23.5	56.1	
10	21	3.6	45.7	
9.1		40.0	33.6	
7.8	22	5.3	16.0	A
8.6		20.4	11.0	A
8.2		21.9	55.9	A
10		47.5	38.5	
10		59.6	52.3	
9.5	23	20.6	30.2	
9.6		47.7	43.0	
10		59.5	34.7	
10	24	4.1	23.8	
9.6		38.3	18.5	
9.1	25	14.2	47.4	
8.8		27.6	6.7	
8.8	26	20.9	0.0	A
9.5	27	2.2	18.1	
10		5.1	1.2	
9.8		22.7	25.7	
8.8		40.3	51.4	A
10		49.6	7.9	
10		57.5	26.3	
10	28	11.9	15.7	
9.9		44.8	42.1	
9.4	29	5.2	3.6	
8.9		7.4	46.6	
10		9.3	38.4	
10		28.7	28.1	
10		33.5	57.0	
9.1		34.4	35.7	
10		53.4	43.5	
9.2	30	1.5	55.8	
10		3.6	31.5	
9.4	31	1.5	9.9	
9.9		3.7	14.8	
9.0		30.8	20.7	
9.8		38.4	40.2	
10		40.2	36.9	
9.5		51.1	49.5	
10	32	27.6	53.3	
8.5		57.0	36.9	A
9.5	33	27.9	1.0	
9.2		40.7	50.7	

501—560

m	2h m	s	−19° ′	
8.3	33	52.5	22.3	
9.9	34	10.2	49.7	
9.6		15.2	18.4	
8.3		19.5	13.5	
9.2		45.2	58.3	
9.5	35	15.5	2.6	
9.4		18.4	0.9	
9.0		29.9	30.6	
9.0		33.8	50.0	
8.5	36	25.3	58.2	A
9.8		26.1	54.6	
8.8		26.7	39.7	A
9.2	37	29.4	18.[illegible]	
9.5		37.7	34.8	
9.5		48.3	35.9	
9.8		49.9	26.1	
9.9		52.8	34.8	
4.0	38	20.3	11.1	B
9.9		42.9	51.0	
9.4	39	20.8	29.9	
8.7		46.7	30.2	A
9.0		50.9	3.6	A
9.3		52.4	30.4	
9.3		57.3	30.9	
8.9	40	18.8	34.2	A
9.4		37.3	26.6	
9.0		40.9	16.0	
10	41	9.5	49.2	
8.9		24.2	58.6	
8.3		31.8	17.4	
9.0		44.9	35.9	
9.7	42	12.0	6.5	
8.3		12.4	37.9	A
9.2		32.2	14.0	
9.3		53.5	56.6	
9.0	43	17.5	4.2	WZ
9.9		24.9	31.7	
9.9		34.0	30.8	
9.8		49.6	6.2	
10	44	18.0	28.5	
8.8		21.6	49.9	
10		28.5	32.3	
10		37.2	19.1	
10	45	2.0	24.6	
9.8		6.4	21.1	
9.7		16.5	16.4	
10		17.4	18.9	
9.7		24.1	12.2	
9.0		42.9	21.0	
8.9	46	2.7	2.4	A
9.9		7.0	16.7	
9.8		24.3	28.7	
8.8		51.6	17.3	
9.9		58.6	24.2	
9.2	47	2.7	46.7	
9.3		13.3	53.5	
9.2		20.1	3.5	
9.8		30.2	4.6	
10		32.0	21.3	
9.7		58.4	13.3	

561—620

m	2h—3h m	s	−19° ′	
9.7	48	6.2	13.2	
10		24.9	54.0	
9.8		35.2	36.0	
8.6		55.7	28.0	
8.5		58.2	43.4	A
8.9	49	13.4	21.3	
9.3		32.5	2.1	
8.3		43.3	17.5	A
9.1	50	40.3	37.9	
9.0		58.0	53.9	B
9.5	51	7.8	20.8	
9.5		10.0	0.8	
9.0		11.2	1.4	
9.9		13.3	23.2	
10		40.9	35.5	
9.6	52	2.4	45.5	
9.5		16.9	36.1	
9.5		40.3	2.2	
9.5		44.1	15.2	
9.1	53	5.0	47.1	
8.9		26.9	26.9	
9.5		30.4	10.6	
9.8		51.0	45.1	
10		52.5	35.5	
9.5	54	2.4	37.7	
10		9.0	39.2	
9.8		16.9	31.7	
9.9		18.8	50.7	
9.8	55	2.6	41.9	
10		11.5	25.4	
8.0		15.7	55.2	A
9.1		28.5	31.5	
8.8	56	7.0	1.3	
8.0		27.0	4.3	A
9.6		39.0	31.8	
9.7	57	8.0	19.3	
9.1	58	0.4	10.0	
9.8		21.1	9.2	
9.3		23.0	18.3	
7.3		35.2	38.5	A
9.4		43.3	58.1	
9.6	59	11.7	43.2	
9.0		24.2	45.3	
8.6		25.3	51.1	A
9.1		31.6	18.7	
9.7		48.9	12.5	
10		52.1	47.6	
9.8	0	9.5	9.4	
8.5		10.3	19.8	A
9.4		11.3	17.7	
9.9		40.6	18.7	
8.9	1	8.4	51.6	
9.6		13.6	15.3	
9.6		18.7	20.2	
9.6		20.8	30.5	
7.8		33.4	51.6	A
7.3	2	17.8	31.3	B
8.5		29.2	26.2	
8.6		57.9	35.4	A
8.9	3	1.0	0.6	

621—680

m	3h m	s	−19° ′	
10	3	1.3	17.9	
9.3		51.9	36.3	
9.8	4	49.8	3.2	
9.1	5	1.5	16.7	
9.2		12.7	54.2	
9.0		12.8	5.7	
8.7		31.9	22.7	A
10		47.8	25.2	
9.7	6	20.5	2.7	
8.7		2/.4	5.2	
9.2		46.9	9.5	
10		58.0	32.9	
8.2	7	0.9	14.9	A
9.6		35.7	16.7	
10	8	4.1	18.3	
9.1	9	4.3	53.0	A
9.6		6.8	35.0	
9.4		9.4	20.7	
9.3		12.7	53.2	B
9.0		18.2	22.7	
9.5		18.2	29.0	
9.4		25.7	30.5	
8.0		30.0	53.5	B
9.3	10	15.6	17.9	
9.3		22.7	40.3	
10		34.5	10.0	
9.2		38.7	44.3	B
8.5	11	33.7	35.5	A
9.1		41.3	46.7	
8.8		45.2	9.0	
5.9	12	4.1	5.2	B
9.7		45.0	53.7	
9.1	13	5.7	8.8	
7.3		11.4	21.6	A
10		17.2	11.3	
9.2		21.8	42.6	
9.5		45.7	1.0	
9.6		53.7	56.7	
9.8	14	12.1	20.9	
9.4		16.3	47.5	
9.8	15	3.3	41.7	
9.0		19.7	55.2	
9.4		23.4	20.6	
9.5		42.3	21.5	
9.8		53.2	4.7	
8.5	16	11.4	37.1	A
9.0		14.9	50.[illegible]	
9.8		41.3	2.1	
9.8	17	11.1	59.4	
9.9		37.3	14.3	
9.4		44.9	47.4	
9.7	18	1.9	45.9	
9.1		25.8	[illegible].0	A
8.3	19	41.4	24.3	B
9.2		51.5	11.3	
9.5	20	8.4	40.3	
9.3		10.9	8.9	
9.5		29.9	19.2	
9.2		30.1	8.4	A
8.5		37.5	12.3	A

681—740

m	3h m	s	−19° ′	
9.3	21	0.4	30.5	
9.9		16.5	49.7	
8.5	22	5.2	9.3	A
9.9		16.9	57.5	
10		27.5	25.4	
9.7		45.7	19.1	
9.1	23	4.9	13.2	A
9.1		14.4	32.2	
9.5		24.1	46.3	
10		38.1	45.9	
9.8		42.3	17.8	
9.2	24	3.3	12.7	
9.0		4.8	34.7	A
7.5		8.9	55.7	B
9.4		40.2	10.7	
10		57.6	41.0	
10		58.6	23.3	
8.3	25	17.2	48.3	A
10		41.6	21.7	
8.5	26	23.8	45.1	A
9.4		31.4	18.3	
9.3		54.3	46.7	
8.5	27	3.2	33.0	A
9.4		6.7	33.3	
9.1	28	31.1	10.5	
9.9		41.7	17.9	
8.0	29	40.0	1.7	B
7.3		54.5	51.1	B
9.1	30	26.3	30.2	
9.9		35.9	40.1	
10		53.3	22.5	
9.1	31	23.4	35.4	
9.6		27.1	47.5	
8.7		57.6	13.3	WZ
9.4	32	47.4	56.5	
neb		58.4	10.0	
8.0		59.4	28.2	B
10	33	22.1	49.6	
10		23.7	14.1	
neb		40.7	3.4	
9.5		41.4	25.0	
9.7		52.6	49.2	
8.8	34	2.2	53.4	A
7.0		10.1	56.5	A
8.6		43.7	51.9	
9.1		44.8	55.6	
9.4	35	11.6	10.4	
8.9		40.5	28.1	A
9.2	36	4.6	0.1	
8.7		10.5	16.8	A
9.3		12.0	7.4	
7.4		14.3	10.4	B
7.0	37	22.6	34.5	A
9.8		24.6	30.5	
9.2	38	11.5	51.4	
9.8		25.0	57.3	
8.5		32.1	35.7	A
9.2		47.1	36.0	A
8.5	39	17.0	25.5	A
9.8		25.4	54.3	

741—800

m	3h m	s	−19° ′	
9.8	39	47.6	30.5	
9.1		57.1	23.1	A
9.5	40	15.0	8.9	
8.7		37.5	36.5	A
9.0		40.5	15.7	A
9.1	41	26.7	37.0	
9.5		56.6	29.1	
9.0	42	34.1	27.7	
9.3	43	18.1	48.2	
10		18.1	39.3	
6.8		43.9	11.1	B
9.7	44	5.6	19.8	
9.3		21.6	10.5	
9.4		34.3	33.4	
9.6		41.1	16.5	
8.5		43.2	20.9	B
9.2		45.9	3/.9	
9.4	45	12.1	2.6	
9.0		38.0	1.0	
9.5		40.7	23.9	
10	46	3.3	11.3	
10		15.8	29.0	
8.8		47.4	43.2	
9.8		50.3	27.4	
9.6	47	6.7	21.3	
10		10.7	28.3	
9.1		16.1	14.1	
9.3		2[illegible].0	41.3	
9.5		43.4	30.8	
9.8		50.9	5.9	
8.5	48	5.6	49.0	
10		8.6	13.6	
9.6		30.2	6.4	
9.2		39.7	6.5	
9.8		54.5	38.2	
9.8	49	5.0	39.5	
9.0		8.7	54.4	A
7.0		19.6	51.5	A
9.8		32.4	30.5	
10		34.9	25.3	
9.7		56.4	54.2	
9.1	50	16.7	6.9	
9.4		36.1	41.1	
9.3		43.8	56.9	
9.1		50.6	49.8	
9.5	51	0.0	38.9	
9.8		25.5	35.9	
10		31.4	14.5	
8.9		36.9	50.9	A
9.5	52	16.6	5/.0	
9.9		20.5	25.2	
9.0		39.9	21.6	
9.5		45.4	32.3	
9.3		58.1	38.0	
9.7	53	21.2	48.3	
6.8		32.6	39.4	A
9.1		35.1	35.8	A
10	54	55.3	56.5	
9.7	55	16.0	55.0	
7.3	56	4.7	54.4	B

801—860				861—920				921—980				981—1040				1041—1100			
3h—4h		—19°		4h		—19°		4h		—19°		4h		—19°		4h—5h		—19°	
m	m	s	′		m	s	′		m	s	′		m	s	′		m	s	′	
9.0	56	14.1	27.1	A	10	9	2.4	11.3		9.7	20	31.5	5.8		8.7	32	31.5	10.8		9.6	46	44.3	52.0	
9.5		20.5	14.0		9.2		8.1	40.4		9.0		38.4	54.1		9.1		35.2	54.9		9.3		54.4	20.6	
9.2		22.6	28.0	A	7.0		20.2	0.3	A	9.1		45.8	35.3		10		35.6	48.5		10	47	37.5	3.9	
9.7		26.1	29.8		8.9	10	11.2	58.4	A	9.4	21	1.2	26.2		9.3		43.0	16.4		9.3	48	21.0	29.7	
9.8	57	12.3	45.9		9.8		20.1	33.4		9.2		2.9	13.8	A	8.5		58.1	26.0		9.5		27.8	47.8	
7.7		52.4	52.1	A	10		30.5	31.0		9.8		6.8	33.3		9.8	33	29.4	48.3		10		58.0	30.7	
9.8		57.9	13.0		8.7		50.7	49.3	A	10		7.5	49.7		9.5		43.7	45.5		9.6	49	3.7	53.3	
9.5	58	14.5	5.7		9.6		53.3	56.2		9.8		12.4	40.9		4.5	34	6.2	57.3	A	9.9		13.4	59.4	
9.8		15.4	55.8		9.0		55.8	28.9		8.0		18.5	40.9	B	9.6		7.0	33.0		9.0		16.3	59.2	
10		25.8	39.5		7.8		57.7	53.1	A	9.5	22	15.0	37.9		9.6		23.7	0.4		9.5		24.6	31.4	
9.4		32.4	14.6		9.2	11	5.2	51.7	A	6.0		16.0	46.4	B	9.9		30.7	27.3		9.5	50	9.2	51.5	
9.2		45.8	54.2		9.5		11.1	15.4		9.6		25.1	4.2		9.5		52.6	58.3		9.3		10.7	44.4	
9.5		52.0	8.5		9.8		31.6	58.8		9.1		28.0	48.8		10		53.1	21.1		9.0		24.2	26.7	
9.3	59	3.9	1.9		9.7		42.5	58.0		10		44.2	18.6		9.8		56.7	0.2		9.4	51	5.4	53.9	
9.3		13.6	0.8		8.3		55.6	35.6	B	9.5	23	6.1	3.6		8.8	35	1.3	43.8	A	9.3		5.8	19.8	
9.4		30.5	2.4		10	12	19.1	55.9		10		15.0	40.4		9.5		44.9	3.4		9.4		32.3	3.7	
9.4		37.9	41.4		9.2		20.4	45.2	A	9.0		17.0	3.2	B	9.8		58.4	54.2		9.8		50.8	29.1	
9.6		44.2	9.0		10		20.8	48.8		9.2		21.9	22.5		9.5	36	14.0	6.7		9.8		56.2	41.0	
9.5		46.3	15.4		9.8	13	17.7	33.3		9.6		32.2	16.7		9.3	37	41.7	47.4		9.0	52	28.1	4.3	A
7.3		51.1	54.4	B	9.8		18.3	23.9		9.3		33.5	34.8		9.1		55.5	42.7		9.3		42.6	12.0	
9.0	0	8.2	24.7		9.5		19.1	53.2		9.8		51.6	58.7		8.9		57.1	5.4	B	9.3		45.1	46.0	
10		12.8	39.0		9.5		37.5	13.6		9.5	24	14.4	59.8		9.3	38	0.6	45.0		9.4	53	11.4	30.6	
10		14.6	41.1		9.3		40.2	54.1		9.8		20.8	10.1		9.0		2.5	5.3	B	9.5		14.4	55.6	
9.8		17.0	1.3		9.8	14	9.8	43.1		9.6		23.7	6.9		8.7		9.6	10.9	A	9.0		20.3	14.2	
8.9		27.4	41.3	A	7.3		26.1	41.0	B	9.8		41.4	46.7		9.3		16.4	37.6		9.6		24.3	33.9	
9.1		56.4	48.1		8.5		33.6	59.1	A	8.5		50.6	47.5	A	9.3		43.6	57.6		9.0		33.2	2.6	A
9.8	1	27.2	31.0		8.4		35.7	35.7	B	9.6		55.1	1.1		9.8	39	9.7	37.7		9.2		38.1	4.7	
9.5		52.1	0.8		8.8		56.9	53.5	B	9.0	25	33.8	10.8		9.8		10.7	5.9		9.5		45.0	24.8	
9.0		55.4	47.9	A	9.8	15	2.0	21.2		8.8		37.3	57.7	A	9.4		10.8	41.3		9.7		52.5	5.4	
9.4	2	13.0	52.8		9.6		4.9	21.1		9.0		53.5	3.9		9.5		49.8	24.8		9.2		53.0	30.5	
8.4		29.3	31.4	A	9.3		12.6	6.2		10	26	23.8	12.2		9.5	40	24.4	18.7		9.8		58.2	5.6	
8.9		31.4	40.5	A	10		17.3	0.8		8.6		31.6	54.9	A	9.3	41	18.0	31.9		8.2	54	1.1	51.4	B
9.7	3	10.6	15.5		8.8		31.4	9.6		9.4		36.9	22.5		9.5		29.1	6.5		9.0		9.9	11.4	
9.8		12.1	26.6		10		34.2	9.7		7.9		43.6	40.1	B	8.0		59.0	59.3		9.7		29.4	17.8	
6.5		24.4	40.1	A	10		38.7	31.9		9.8	27	6.4	17.8		9.4	42	11.2	16.3		9.0		53.4	17.8	
7.0		32.7	23.1	B	9.5		43.7	32.1		8.5		32.0	28.7	B	9.3		20.9	27.5		9.3	55	27.5	51.9	
9.5		33.3	14.2		7.7		45.2	58.0	A	10		50.2	46.8		9.8		46.9	33.0		7.5		34.9	52.8	A
8.0		34.4	5.6		8.2		50.9	46.2	B	10	28	2.2	42.5		9.5		47.4	7.3		9.8		39.0	56.3	
8.5		40.8	29.2	A	9.4		59.2	29.0		9.0		24.5	30.7		9.3		59.6	53.7		10	56	3.7	34.0	
9.2		51.0	59.1		8.9	16	5.1	12.5		9.6		27.5	24.0		9.1	43	52.9	8.9		9.8		11.2	18.7	
8.4	4	20.9	28.5	A	10		5.8	38.5		9.5		34.3	48.0		9.8	44	5.6	13.2		9.8		23.1	1.0	
9.3		25.5	48.4	A	9.5		11.4	47.5		9.7		49.1	54.8		8.6		9.2	18.8	A	9.1		45.5	26.9	
9.4	5	7.1	0.2		9.2		12.0	30.3		9.4	29	19.4	42.5		7.3		21.8	9.3	B	9.7		47.0	41.0	
9.3		8.6	4.8		9.0		43.3	15.8		9.0		21.1	31.3		9.3		38.3	58.8		9.0		51.5	19.9	
8.5		43.0	48.7	A	9.4	17	8.7	54.5		8.5		39.9	1.6		9.8	45	1.5	3.7		8.4	57	3.2	42.6	A
9.2		46.5	42.6		10		9.4	43.5		10		53.1	33.6		9.8		16.3	9.5		9.0		8.5	24.9	
9.5	6	1.7	58.9		8.0		16.9	48.8	A	9.4		57.1	34.7		9.5		16.9	28.6		9.7		33.3	59.1	
9.2		4.8	24.6		9.0		17.4	22.9	A	9.6		59.4	20.5		9.3		27.6	36.0		10		37.7	11.9	
10		11.5	37.5		10		51.2	25.5		9.4	30	9.2	36.0		9.9		28.1	5.9		9.5		52.5	27.5	
8.5		18.6	1.5		9.3		54.3	39.2		9.5		17.6	27.0		9.4		29.4	52.4		9.0	58	8.2	4.9	A
10		34.9	29.2		9.8	18	18.0	55.9		9.7		23.4	57.0		10		34.5	20.0		8.9		10.4	49.8	A
9.0	7	6.1	42.6	A	10		43.1	11.3		9.7		23.7	35.4		10		41.0	47.9		9.7		27.8	15.6	
9.8		11.5	5.5		9.4		45.3	25.0		10		26.6	37.5		10		49.0	21.5		9.4	59	16.2	4.4	
10		37.8	15.8		9.8		55.2	27.4		9.4		28.3	13.7		9.0		49.0	38.6		9.4		33.7	57.4	
9.9		56.3	13.8		10	19	22.0	1.7		9.3	31	4.1	23.1		9.1		49.6	41.2		9.7		34.4	12.9	
9.8	8	0.1	49.6		9.3		40.3	50.8		9.8		52.0	18.3		9.6		55.3	26.9		10	0	1.0	11.0	
8.8		17.7	14.3	A	8.9		51.8	59.5	A	9.7	32	4.4	35.4		9.3	46	4.2	25.9		9.7		10.4	15.0	
9.2		21.5	29.6		9.2		58.5	42.7		8.7		5.3	8.0		9.8		33.0	30.6		9.1		29.3	0.3	
9.9		38.2	26.1		10	20	16.9	34.6		7.2		8.5	55.6	B	9.1		37.5	4.3	A	9.3		29.9	5.9	
9.2		53.2	31.4		9.7		25.5	2.1		9.1		30.4	17.0		9.5		42.2	43.7		9.8		36.3	5.9	

1101—1160				1161—1220				1221—1280				1281—1340				1341—1400			
	5h	−19°			5h	−19°			5h	−19°			5h	−19°			5h—6h	−19°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.9	0 41.3	1.1		9.1	17 42.0	26.4	A	9.4	30 10.0	58.9		9.3	43 44.8	49.2		8.8	58 12.3	16.7	A
7.0	51.2	35.7	B	9.9	53.9	35.6		9.0	22.2	32.5		9.5	44 33.0	36.3		9.4	13.4	38.1	
8.5	1 16.5	13.3		9.3	18 1.0	26.0		8.3	33.0	44.3	A	9.5	33.6	40.3		8.7	14.0	43.5	A
9.8	2 13.4	59.0		8.9	12.6	21.2	A	8.5	44.1	56.7	A	9.3	45 8.0	18.4		9.1	29.6	15.4	A
9.7	14.2	49.3		10	20.3	12.5		8.0	46.9	0.2		9.0	11.1	49.5		8.3	31.1	29.1	A
9.3	14.9	5.8		7.5	41.3	30.1	A	10	31 7.6	58.9		9.0	11.7	7.1	A	9.7	32.0	32.3	
9.8	38.0	45.9		9.3	55.3	55.4		9.9	29.7	41.4		7.7	30.6	25.6	A	9.5	34.1	7.4	
9.5	49.9	55.3		9.4	56.3	28.2		9.8	32 33.4	53.7		9.5	50.9	41.4		9.5	59 3.7	2.1	
9.1	3 10.2	36.3		9.1	19 0.2	11.6		9.5	46.6	34.9		7.2	53.7	5.4	A	9.3	44.9	55.9	
9.5	12.7	32.1		8.9	5.3	25.0	A	9.5	33 8.0	9.8		10	46 34.7	27.7		9.5	44.9	14.0	B
9.6	20.2	18.5		9.8	26.5	19.3		8.2	8.4	52.4	A	9.0	54.4	55.1	A	9.8	0 17.5	9.0	
9.9	22.3	4.9		8.5	41.4	48.1	A	9.3	32.3	38.2		9.7	47 26.8	20.4		10	23.1	31.9	
10	29.9	41.5		6.0	42.7	49.1	A	9.1	42.0	11.8		6.3	40.3	40.2	A	9.8	27.9	48.0	
9.3	57.8	14.5		9.7	54.9	47.1		8.0	34 0.3	18.2	A	9.6	53.6	22.8		9.8	35.2	36.1	
8.5	4 47.5	20.8	A	9.2	56.2	59.8		9.0	4.2	45.0	A	9.5	59.7	25.7		8.2	37.3	55.8	B
9.0	5 22.4	11.0	A	8.8	58.5	38.3		10	17.2	30.4		9.6	48 13.1	55.5		8.5	43.5	4.4	A
9.0	32.1	12.1	A	9.7	20 1.6	19.2		9.6	18.1	21.8		7.5	13.2	44.1	A	9.5	53.3	43.4	
9.6	47.6	43.9		9.5	10.0	50.0		9.0	38.2	9.3	A	9.4	16.0	14.9		9.6	56.5	18.5	
9.1	6 14.8	10.4	A	9.4	24.4	31.7		9.5	58.3	42.0		10	40.6	39.8		9.5	1 17.7	34.5	
8.9	18.0	32.9		9.6	33.9	10.8		10	35 0.1	32.1		9.7	49 23.7	19.1		9.5	23.3	25.4	
9.5	25.1	40.4		9.0	46.7	9.3		9.5	5.9	0.2		9.0	34.8	11.2		5.8	23.6	8.6	B
9.5	57.0	9.8		8.1	53.0	13.8	B	9.5	34.2	32.2		9.5	36.1	48.9		9.5	26.1	46.8	
9.5	7 11.8	47.1		10	57.0	8.0		9.4	39.7	54.7		9.3	39.3	11.0		9.5	45.6	9.5	
9.2	22.9	43.0		9.5	21 26.7	57.2		9.0	40.5	3.0	A	9.4	42.4	29.2		8.3	50.3	45.7	A
9.4	27.4	48.4		9.0	22 1.6	38.6		10	36 3.9	18.5		9.7	51.9	39.9		8.3	52.0	24.6	A
9.3	48.3	0.7		9.8	2.5	46.4		9.6	13.2	18.8		9.5	58.3	31.5		9.1	2 13.0	4.8	A
9.2	8 22.0	45.6		9.8	18.6	0.5		9.2	37 15.8	14.0		9.5	50 0.0	41.7		9.7	23.3	45.2	
9.5	44.5	19.3		9.5	33.2	5.1		7.5	30.9	43.0	B	9.5	39.9	31.0		9.5	46.1	56.9	
7.8	9 4.6	13.7	A	9.2	36.1	40.5		9.5	40.7	33.6		8.8	46.4	14.1	A	9.4	51.3	55.7	
9.5	45.2	25.8		8.2	43.8	15.8	A	8.0	48.5	37.9	B	9.7	52.4	1.0		9.1	3 13.0	34.4	A
9.9	57.9	8.5		9.5	23. 25.6	40.7		9.0	38 13.1	34.7		9.8	55.3	53.7		9.6	56.2	35.0	
10	10 31.0	46.8		10	47.7	47.2		9.2	14.4	32.7		10	51 18.0	46.7		9.9	4 6.6	51.8	
9.4	40.3	31.4		10	54.4	12.8		9.5	29.0	53.2		9.8	25.8	49.8		9.8	19.9	43.7	
9.6	49.2	58.4		9.2	24 0.3	23.7	A	9.5	32.5	10.7		7.8	27.1	24.2	A	9.4	23.3	7.4	
8.3	11 22.9	37.6	A	9.5	7.4	14.9		8.9	35.5	4.1		9.3	34.9	37.3		9.4	26.2	22.7	
9.2	26.5	0.8		9.2	15.8	47.2		9.8	40.3	39.8		9.4	48.0	58.5		9.5	28.1	55.0	
9.4	48.6	44.4		9.8	19.7	48.1		9.2	39 2.4	22.8		9.6	58.2	44.6		9.3	5 12.8	44.8	
9.8	55.5	5.9		8.8	28.0	32.0		9.5	10.1	7.6		8.7	52 32.6	5.1	A	9.5	34.0	19.6	
9.2	56.8	14.4		9.0	25 12.3	24.2	A	9.8	22.9	22.2		9.1	32.8	38.7		9.4	44.0	6.8	
9.6	12 28.4	13.9		9.3	32.1	4.1		9.8	27.0	24.1		9.2	56.8	49.9		9.4	6 7.3	45.9	
9.2	13 56.5	4.7		9.3	45.4	14.0		9.2	27.9	20.4		9.2	53 3.2	10.1		9.7	18.9	14.0	
9.0	14 1.4	40.2		9.5	26 2.6	39.5		9.7	31.1	13.0		9.5	24.1	40.1		9.7	19.5	8.2	
9.4	4.9	57.7		8.4	16.3	12.9	A	9.1	44.0	28.3		8.5	44.9	51.6	A	9.6	20.7	18.5	
9.0	11.3	33.5		9.6	23.1	40.9		9.5	55.7	42.5		9.1	54 9.1	25.3		9.5	23.3	41.9	
9.4	23.8	32.2		9.3	33.3	52.7		9.6	40 4.1	27.7		9.4	10.2	9.2		9.2	38.1	33.4	
10	35.9	25.9		8.8	43.1	11.2	A	9.0	20.5	1.9		9.3	33.2	14.7		9.4	55.0	18.1	
8.0	38.5	50.3	A	9.5	46.7	44.7		10	35.4	18.7		9.8	55 3.7	2.2		9.2	59.3	14.3	
9.5	40.6	7.5		9.2	56.4	27.2		10	42.3	40.7		9.6	6.6	15.0		9.5	7 25.1	24.4	
9.1	55.5	37.3	A	8.5	27 6.3	23.9	B	10	43.9	44.5		7.7	55.2	41.5	B	9.8	30.2	42.3	
10	56.4	50.6		8.7	30.0	32.4	A	9.3	41 1.0	55.0		9.1	56 7.1	36.7		8.7	46.2	34.3	A
9.4	15 57.2	11.9		9.1	34.9	31.5	A	8.8	10.5	3.0		9.2	24.8	34.0	B	8.0	8 2.1	29.4	A
9.5	58.3	44.3		9.7	28 9.3	59.9		10	16.2	36.0		8.5	33.0	43.5	A	9.2	22.0	6.6	
9.5	16 7.4	32.7		9.1	17.2	41.5		9.2	26.9	18.4		9.3	50.7	33.4		9.4	22.9	12.0	
9.8	17.5	47.9		9.8	18.2	12.9		9.8	27.4	26.5		9.5	57 0.8	55.4		8.7	32.7	41.0	A
9.3	19.7	34.8		9.5	25.3	49.1		9.5	48.4	55.7		9.5	2.7	0.1		9.5	37.9	53.5	
8.8	20.3	59.4	A	8.8	46.6	17.5		8.9	42 5.1	4.5		9.3	8.1	30.2		9.1	52.5	0.6	
9.5	28.0	11.6		9.5	47.7	27.7		9.4	6.6	39.9		9.5	21.5	2.7		9.5	59.8	38.0	
9.7	43.2	59.8		9.2	29 29.5	20.8		7.1	55.1	27.2	A	9.6	51.5	7.4		7.8	9 17.3	26.8	B
9.5	51.4	44.5		9.5	55.0	59.3		9.4	43 18.2	32.3		10	56.7	25.7		8.2	20.8	45.3	A
9.4	17 40.2	54.8		9.1	30 1.7	29.4		9.2	19.7	0.1		9.5	58 9.3	41.3		8.3	10 4.5	18.4	B

1401—1460

	6h		
m	m	s	—19° ′
9.8	10	23.6	3.8
9.3		37.3	58.3
9.5		47.9	52.1
8.8	11	16.6	28.6
7.0		25.1	8.3 B
9.4		56.6	10.9
5.5		58.3	54.8 A
9.5	12	7.1	29.3
9.8		35.9	51.8
9.5		53.0	44.0
9.4		55.2	34.7
9.5	13	7.9	32.9 A
9.0		9.1	26.0 A
9.1		24.0	2.8
9.2		28.2	40.7 A
9.0		28.4	13.4
9.5		31.4	6.2
9.4		52.6	26.1 A
8.6	14	36.0	19.3 A
9.5		42.5	18.0
9.7		51.6	43.2
9.3		52.3	11.8
9.1	15	17.7	58.7
9.5		20.0	23.0
8.2		21.9	46.3 B
9.8		59.8	46.3
8.7	16	1.4	2.0 A
9.5		8.0	56.6
9.3		25.6	26.0
9.1		37.3	45.6
9.4		46.9	16.3
9.5		49.9	50.5
9.5	17	5.5	22.8
9.4		19.9	4.5 A
7.0		31.1	42.9 B
9.2		36.6	4.3 A
8.7		53.6	56.2
9.8	18	15.4	46.0
8.5		35.7	38.6 A
9.5		54.6	2.1
9.8	19	0.8	46.5
9.3		5.9	50.3
8.3		17.3	54.8 A
9.3		37.4	47.0
9.8		52.2	9.7
9.5	20	6.1	50.2
7.3		9.6	14.4 A
9.8		23.8	38.7
9.5		38.3	59.0
9.5		39.3	59.9
9.4		46.6	12.8
7.8	21	18.1	22.0 A
9.5		29.5	8.2
8.5		40.0	1.1 A
9.4		57.5	20.9
7.8		59.0	42.5 A
9.8	22	21.4	56.9
8.8		23.7	36.2 A
8.8		35.8	57.2 A
9.1		51.8	42.7

1461—1520

	6h		
m	m	s	—19° ′
9.5	23	0.6	22.1
9.5		47.5	0.0
9.5		53.0	43.8
6.0		53.5	7.0 B
9.3	24	1.8	8.3
9.4		18.5	18.9
9.5		25.2	50.5
9.1		35.6	55.9
9.5		39.1	22.4
9.5		44.0	24.1
8.8	25	17.1	8.0 R
9.5		23.0	23.6
9.5		39.7	36.4
9.3		59.9	11.8
9.5	26	5.3	41.8
8.5		7.3	57.0
9.2		13.0	20.2
9.0		15.0	39.2
9.8		22.7	40.5
8.5		29.8	55.1 B
9.5		40.7	36.0
9.4	27	16.6	19.8
9.2		22.9	16.8
9.8		45.7	31.6
9.5		47.1	50.4
9.5		50.2	10.6
9.5	28	7.5	8.8
9.0		24.6	6.6
8.1		29.9	50.3 B
9.8		33.3	52.0
7.8		34.3	32.1 B
9.5		45.9	48.4
9.5		53.5	46.9
9.8		59.6	44.3
9.2	29	4.9	16.1
9.4		10.6	16.1
9.4		20.2	36.0
9.4		25.6	26.0
9.0		37.6	26.4
10		57.4	16.6
7.3	30	2.3	22.2 B
4.2		21.1	7.6 L
9.6		31.0	23.5
9.8		50.5	3.4
9.4	31	1.9	15.0
7.5		10.0	40.2 B
9.0		23.6	11.1
10		34.4	14.8
9.5		39.0	25.0
9.5		52.4	46.5
9.3		54.8	20.3
9.1	32	8.4	53.7 A
9.5		30.8	56.6
9.5		48.3	23.2
9.7		53.2	0.4
9.4	33	24.1	50.1 A
9.8		37.7	10.4
8.5		39.7	2.1 A
9.5	34	2.4	46.9
9.4		12.4	51.5

1521—1580

	6h		
m	m	s	—19° ′
8.9	34	13.5	56.3
9.1		46.6	10.0
9.2		58.4	34.7
9.3	35	11.1	32.5 A
9.4		20.7	6.7
9.5		28.1	32.5
9.4		42.4	6.7
9.3		53.9	38.0
9.5		54.3	56.1
9.0	36	0.7	38.5 A
9.0		3.3	56.8 A
9.0		22.1	29.7 A
8.7		29.0	12.8 A
9.4		32.1	52.5
8.7		48.4	19.7 A
8.5		54.6	0.6 A
9.2	37	0.2	41.5
10		8.6	4.6
9.4		52.4	19.0
9.4	38	0.1	33.9
9.8		11.0	49.4
7.7		12.6	31.0
9.3		30.1	43.2
9.4		32.6	16.5
9.4		45.7	37.5
9.3	39	1.2	15.4
9.2		1.6	3.4 A
9.3		31.0	22.5
8.5		50.3	14.9
9.0		53.7	38.7
6.5	40	8.5	43.0
9.2		9.9	2.5 A
9.3		14.4	40.4
9.2		17.8	57.5
8.9		29.4	13.4
9.4		39.3	59.5
8.8		47.1	29.1
9.9	41	0.6	43.0
9.4		0.8	8.9
8.9		10.1	0.8 A
9.3		16.0	21.3
9.1		20.0	23.5
9.7		38.5	44.8
9.2		44.0	45.5
9.4	42	1.7	32.6
8.6		1.9	51.4
9.3		2.7	47.7
9.5		3.2	45.9
9.2		7.0	56.6
9.1		18.0	24.0 A
9.1		19.3	55.9
9.5		31.0	39.8
9.8		44.4	31.8
9.4	43	19.6	59.7
7.8		23.1	13.3 A
9.1		30.1	5.9 A
8.8		33.0	59.7
9.5		52.3	9.9 A
9.0		55.0	24.8
9.1		55.1	51.1

1581—1640

	6h		
m	m	s	—19° ′
9.3	43	55.1	10.2
9.5	44	17.0	27.3
9.5		32.4	8.0
9.5		41.3	12.6
8.3		42.6	25.0 A
9.3		57.7	39.1
9.8		58.4	36.2
9.0	45	17.1	31.4 A
8.5		36.6	5.5 A
9.4		53.0	58.6
9.5	46	33.5	27.5
8.7		37.3	57.2
8.3		47.9	9.3 A
8.3		57.5	24.9 A
9.5	47	3.6	20.8
8.2		4.3	12.5 A
9.0		15.6	34.5
9.2		25.8	44.8
9.8		36.0	4.0
9.1		54.8	10.9
9.0	48	3.4	17.2 A
9.6		14.2	23.2
9.3		17.6	29.8
9.2		19.7	37.8
9.0		21.9	5.3 A
9.4		34.7	26.2
9.2		40.0	22.7 A
9.4	49	13.1	35.9
10		14.8	3.8
5.1		19.9	57.2 A
8.0		33.6	34.7 A
9.4		49.8	11.0
9.5		54.0	14.6
9.1		55.6	51.9 A
9.5		59.1	8.1
9.5		59.2	25.8
9.4	50	16.0	56.0
9.2		27.7	47.4 A
9.5		30.1	34.6
9.1		35.4	57.0 A
8.5		38.6	31.6 A
7.0		41.6	15.1 B
9.3		48.1	13.4
9.4	51	14.2	11.3
8.9		23.1	8.2 A
9.5		35.0	20.1
9.3		46.5	11.4
9.6		51.6	53.8 A
9.5		54.3	15.7
9.5		59.8	40.6
9.7	52	6.2	59.6
9.2		6.6	54.5
9.2		10.9	53.9 A
9.2		15.6	31.5
8.8		24.5	8.4 A
9.5		27.6	53.8 A
9.1		30.6	13.5 A
9.2		35.1	55.0 A
9.5		37.9	13.2
9.5		57.8	32.1

1641—1700

	6h—7h		
m	m	s	—19° ′
9.5	52	58.0	52.4
8.9	53	15.0	21.1
9.4		20.4	51.1 A
6.7		50.5	57.7 A
7.2		56.6	36.3 A
8.8	54	1.8	49.9 A
9.4		10.0	2.2
9.0		17.9	43.1 A
7.2		31.6	14.6 B
9.4		58.7	20.1
8.6	55	8.5	0.0
8.7		16.9	24.0
9.5		17.7	9.2
9.5		32.5	27.1
9.5	56	4.9	15.2
8.0		15.6	34.0 A
9.1		24.5	30.2
9.1		26.9	54.0 A
9.4		30.0	20.1
9.5		41.4	44.9
9.6		45.9	55.7
9.2		47.3	6.0 A
9.5		47.3	2.0
9.0	57	6.2	0.5 A
9.4		6.6	52.8
9.6		6.6	27.1
9.3		8.3	8.7
9.7		9.0	13.7
9.8		15.7	26.8
8.8		52.0	20.3
9.1		55.5	31.0
8.5		56.8	2.4 A
9.8	58	10.1	59.3
9.8		10.5	1.0
8.5		38.6	35.8
9.0		40.2	45.1
7.5		47.3	59.5
9.4		47.8	7.2 A
9.7		49.9	25.6
10		51.0	8.9
9.0		56.0	38.4
9.0	59	16.4	11.7 A
8.6		21.8	26.2 A
9.3		34.8	56.2
9.5		55.2	17.8
9.5		59.1	7.8
9.5	0	12.8	9.8
9.1		13.4	26.6 A
9.3		13.5	25.3
9.5		18.1	53.6
9.7		24.4	9.7
8.9		24.8	26.1 A
9.6		26.7	29.3
9.4		36.3	8.7
9.3		39.3	19.4
9.0		41.6	31.2 A
9.7		43.1	47.3
9.4		53.6	57.0
9.4	1	13.2	14.5
9.5		20.8	26.2

1701—1760				1761—1820				1821—1880				1881—1940				1941—2000			
	7h	−19°			7h	−19°			7h	−19°			7h	−19°			7h	−19°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.2	1 49.2	24.1		9.7	7 15.1	34.9		9.6	13 42.8	15.0		9.6	19 37.9	58.3		9.1	26 45.0	9.4	
9.6	2 4.1	55.5		10	19.0	50.9		9.9	43.1	56.9		10	38.3	24.2		9.8	54.2	49.3	
9.2	7.0	24.4	A	9.2	29.4	46.5	A	9.7	46.2	11.0		9.3	50.0	52.6		9.3	55.2	10.6	
9.5	8.9	14.4		9.3	40.9	47.4	A	9.7	48.7	16.5		9.8	58.5	13.2		6.2	56.0	6.3	A
8.8	16.9	6.1		9.9	8 1.3	57.1		9.8	49.0	58.0		8.7	20 10.7	43.0	A	9.4	27 0.6	5/.3	
9.5	17.8	56.5		9.5	10.0	4.2		9.3	50.8	51.1		9.8	17.5	20.1		9.8	7.7	33.2	
9.2	26.0	18.7	A	7.0	12.3	44.5	A	9.3	51.6	32.8		10	19.7	16.8		9.4	16.5	50.0	
8.2	29.7	41.7		9.4	12.5	22.0		10	52.4	7.3		9.5	31.4	19.9		9.7	32.8	30.7	
9.0	37.6	17.2	A	9.6	17.8	9.3		9.5	52.8	52.1		9.4	36.3	30.4		9.5	49.3	59.7	
9.7	37.8	45.8		9.5	22.4	19.2		10	14 6.8	53.4		9.2	43.8	38.9		7.3	52.4	49.2	B
8.9	40.7	58.2		9.4	25.4	41.3		9.7	12.8	51.0		9.3	53.2	21.9		9.4	28 16.6	21.0	
9.8	59.6	35.1		9.1	27.1	43.7	A	9.7	22.0	51.1		8.2	54.8	42.5	A	9.8	28.1	20.2	
9.4	59.7	20.5		9.8	28.2	56.6		9.1	28.2	40.2		9.2	56.5	12.6		9.5	36.4	57.0	
9.1	3 13.2	58.2		9.8	34.2	42.9		9.2	30.0	12.9		9.7	21 3.1	59.5		8.7	38.1	21.3	A
9.8	20.8	35.9		9.8	41.0	20.0		9.5	30.7	21.4		9.2	5.7	51.0		9.8	43.9	54.5	
9.8	23.7	27.6		8.6	41.3	44.2	A	9.7	45.2	37.1		9.2	15.3	10.2		9.0	46.2	24.8	A
9.3	28.0	52.0		9.3	9 2.5	30.2		9.0	52.4	57.3		8.6	20.8	51.4	A	10	29 1.7	28.6	
9.3	31.7	54.6		9.5	10.4	0.7		9.1	56.8	3.1		8.9	29.7	55.1	A	9.2	3.3	30.4	A
9.7	33.4	0.2		9.8	13.4	27.4		9.4	59.2	0.5		8.8	31.6	53.6	A	9.0	26.7	27.8	A
7.7	39.6	21.2	A	8.0	16.0	52.2	A	9.0	15 4.5	27.9		9.3	32.5	22.7		9.0	28.0	4.2	
8.7	49.5	31.5	A	9.6	19.0	6.6		9.1	27.7	55.7		9.8	38.3	35.3		8.9	45.3	57.7	
9.0	50.3	22.2	A	9.8	23.5	7.1		9.4	27.9	20.3		9.5	38.8	16.5		9.5	46.0	12.2	
9.8	54.9	32.7		9.1	43.4	14.4		9.9	31.8	59.3		9.4	58.4	48.8		9.3	48.9	16.4	
9.8	57.0	31.0		9.4	57.6	58.2		10	40.8	0.1		9.5	59.9	16.7		8.7	30 4.0	32.3	A
9.9	4 1.3	15.9		9.5	57.8	29.5		8.8	47.4	48.2		10	22 13.3	20.5		9.3	5.6	54.2	
9.9	6.5	35.8		9.3	10 3.3	13.4		9.0	16 2.1	42.3		10	18.3	53.1		9.4	9.2	52.0	
9.5	9.9	41.0		9.5	14.9	50.4		9.5	2.5	51.9		9.4	22.3	29.4		5.8	19.1	22.6	A
9.4	14.0	36.0		9.0	16.7	26.9		10	23.7	42.9		8.6	37.6	51.8	A	9.5	28.7	30.9	
9.0	25.3	49.9		9.7	17.9	58.9		9.4	23.8	47.9		9.0	38.4	32.4		9.8	34.6	34.7	
9.5	25.8	2.5		9.3	28.0	7.0		9.3	24.4	30.7		9.5	50.7	16.6		9.7	34.9	28.2	
9.5	26.8	1.8		9.2	29.6	35.0		9.5	42.6	32.9		9.8	59.8	50.7		9.3	37.1	56.5	
8.7	41.0	51.8	A	10	35.2	16.5		9.3	45.2	32.7		8.8	23 5.1	4.0	A	9.6	37.2	35.4	
8.3	42.9	33.9	A	8.8	40.7	37.7		9.7	46.5	42.5		9.5	12.1	39.1		9.8	39.1	14.8	
10	58.9	2.2		9.8	48.8	48.1		7.5	17 5.4	57.4	A	9.8	12.7	3.2		8.9	45.4	40.3	A
9.7	5 1.0	38.4		9.5	53.5	22.6		9.5	7.8	44.5		8.4	15.7	13.5	B	8.3	52.6	58.6	A
9.1	6.7	56.7	A	10	54.0	58.2		9.8	16.9	56.8		9.5	25.4	41.9		9.3	56.0	3.1	
9.2	8.5	41.3	A	9.8	11 15.1	58.9		8.8	18.7	16.7	A	10	26.9	59.3		9.5	31 1.2	28.8	
9.1	16.5	58.7	A	9.8	22.7	3.8		9.8	25.0	2.0		9.6	28.0	51.7		9.8	32.3	18.3	
9.2	18.3	11.1		9.4	27.7	20.5		9.4	30.2	43.9		7.0	39.3	13.5	B	9.8	34.4	1.4	
9.7	29.6	42.4		9.6	30.9	7.3		8.1	32.9	54.9	A	9.8	24 8.4	20.3		9.5	37.1	27.5	
9.6	32.0	26.1		9.6	37.5	28.8		9.4	48.9	41.0		10	20.5	59.8		9.1	38.0	15.7	
8.2	34.2	39.5	A	10	40.6	45.1		9.8	52.7	6.3		9.5	32.4	21.8		9.8	40.0	20.7	
9.3	37.8	58.4		9.0	51.9	34.6		10	18 0.1	37.5		9.1	42.8	50.1		9.2	43.5	1.5	
8.7	39.2	56.4	A	9.6	59.7	57.0		9.2	7.9	11.4		9.8	47.6	54.6		10	48.8	50.8	
8.0	50.5	23.0		10	12 5.6	30.6		9.6	14.2	16.7		9.5	48.7	37.1		9.5	56.8	42.8	
8.7	50.9	2.1		8.8	18.4	9.9		9.7	15.5	21.2		9.4	51.1	14.4		9.5	56.8	28.5	
9.7	55.0	32.5		8.5	22.5	52.2	B	9.4	20.3	41.6		9.8	59.6	23.1		9.8	32 13.3	23.1	
9.6	6 9.0	33.2		9.8	23.5	42.0		9.3	26.3	50.5		9.6	25 0.6	4.8		9.7	14.7	18.8	
9.9	9.3	43.2		8.6	25.5	51.0	B	9.5	28.7	47.2		7.6	7.9	12.4	A	9.1	23.6	30.6	A
9.9	11.2	44.4		9.2	29.1	47.6		10	36.9	2.3		9.8	11.1	59.9		9.2	23.9	10.7	
9.4	18.6	55.3		9.3	35.5	1.3		9.5	38.5	50.0		9.8	17.3	57.5		9.3	26.0	31.5	
9.5	29.1	43.2		8.9	36.3	12.3		9.1	41.5	11.6	A	9.7	29.5	21.5		9.1	34.9	43.1	A
9.8	32.6	39.2		6.5	39.9	0.6	B	9.0	46.5	39.1		9.9	31.0	40.3		7.7	37.4	56.6	A
9.9	39.7	31.7		9.6	45.4	48.5		9.5	51.4	30.8		9.0	34.7	11.9	A	9.6	54.8	8.2	
9.5	45.5	23.8		9.5	46.5	7.9		9.5	54.9	30.6		9.5	47.6	54.7		9.1	33 1.7	25.7	
9.7	50.5	40.6		9.8	13 13.4	32.0		9.5	55.0	32.8		9.4	26 18.8	43.4		10	16.0	27.0	
9.6	56.3	47.2		10	23.6	34.9		9.8	19 9.4	54.4		9.8	23.6	15.0		9.0	24.6	55.2	A
9.3	59.8	59.7	A	8.5	27.0	42.6	B	7.3	11.5	8.9	A	9.0	30.3	14.5		10	30.7	24.8	
9.4	7 1.4	33.2		9.1	31.4	43.4		9.5	20.9	15.9		9.5	33.4	41.1		9.1	31.2	19.6	A
10	9.8	34.9		9.7	32.5	27.8		9.5	29.6	46.7		9.5	35.5	47.4		9.7	34.5	16.3	

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	7h	—19°			7h	—19°			7h	—19°			7h	—19°			7h—8h	—19°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.2	33 43.4	22.3		9.2	40 53.8	2.7	A	9.5	47 5.9	58.4		9.8	53 23.7	7.1		9.4	59 35.1	39.7	
9.6	44.2	28.3		7.6	56.0	34.7		9.5	7.0	23.6		9.5	27.4	48.0		9.3	51.9	10.7	
6.4	50.4	20.2	A	9.4	41 1.1	1.3		8.7	15.2	9.1	A	9.3	36.4	19.1		8.0	0 1.3	25.0	B
9.8	51.9	35.8		10	13.3	8.3		9.1	20.8	36.8		9.5	46.9	40.4		9.3	4.5	15.5	
9.2	34 2.0	47.8	A	9.2	14.6	11.4		9.6	22.1	55.1		9.0	49.3	20.6	A	8.2	5.9	55.1	A
9.5	19.7	32.3		8.2	23.7	37.7		9.4	39.8	13.5		8.6	54 0.7	40.5	B	9.0	8.6	41.8	
9.6	37.3	54.5		8.7	24.9	12.4		8.7	49.6	18.6	A	9.8	2.8	48.3		9.5	14.5	23.2	
9.5	44.8	16.8		7.8	33.8	2.6	A	10	51.9	57.4		9.5	5.8	17.9		9.2	22.0	36.0	
9.3	45.9	11.0		9.8	36.3	2.5		9.8	54.7	44.1		9.1	8.7	40.5		9.5	26.0	4.0	
8.6	56.2	59.7	A	9.2	37.5	11.4		9.7	55.4	58.1		9.3	15.3	12.3		9.4	32.4	35.1	
9.5	35 11.6	57.6		9.5	41.0	57.6		9.9	58.7	57.3		8.8	23.4	49.0		9.6	43.1	56.6	
9.4	34.7	30.5		9.5	53.2	18.8		9.4	59.6	2.9		8.5	27.6	5.2	A	9.5	45.8	38.5	
9.2	42.4	52.7	A	9.3	57.1	34.2		9.2	48 2.1	46.1		9.2	31.3	56.9		9.3	57.7	47.9	
9.8	43.0	51.9		9.6	57.2	0.8		9.8	3.0	39.8		10	32.5	53.5		9.1	1 13.7	49.2	
9.5	44.3	47.5		9.4	42 2.3	27.5		9.8	20.5	14.7		9.4	34.3	37.6		9.8	16.5	6.0	
9.2	50.9	20.0		8.7	4.0	53.4	A	9.4	36.2	10.0		9.5	49.5	10.6		9.3	26.4	7.4	
9.4	51.8	21.3		9.5	8.3	6.8		9.5	46.5	24.1		10	55.7	41.4		9.3	31.3	39.6	
8.7	36 5.4	4.8	A	9.4	21.9	48.1		9.4	49 15.0	48.0		10	59.6	46.3		9.5	44.4	34.5	
9.6	11.7	19.5		9.7	43.8	30.0		9.2	17.2	33.8		9.8	55 14.7	39.0		9.5	58.9	16.8	
9.7	13.6	19.8		9.5	44.1	31.8		9.4	21.3	47.0		9.1	36.3	15.5	A	7.8	2 2.2	26.5	
9.5	16.3	16.9		9.5	44.3	45.4		9.1	21.8	59.1		9.2	39.9	0.0	A	8.3	11.1	25.1	
9.6	23.6	54.5		9.5	43 13.0	35.0		10	31.7	16.8		9.4	40.9	19.5		6.7	19.0	56.7	A
9.9	36.5	9.3		6.8	15.9	8.2	A	9.8	40.9	49.4		9.2	42.8	49.3		9.4	21.0	13.4	
9.8	39.7	52.2		8.7	16.1	47.1	A	9.8	41.2	29.5		9.1	43.0	4.0	A	8.8	21.2	17.2	
10	40.8	54.4		6.9	23.3	50.0	A	9.8	45.0	25.6		7.9	56 5.1	55.0	A	9.2	54.5	12.7	
9.5	45.9	4.5		9.5	29.9	34.0		9.5	46.1	41.4		9.5	7.7	43.7		9.4	57.4	38.5	
9.7	51.6	14.5		9.6	31.0	45.5		9.7	55.3	34.3		9.5	10.2	18.9		10	3 9.8	29.4	
9.6	37 0.5	26.8		9.1	35.0	19.1		9.1	58.8	54.5	A	10	36.0	2.1		9.3	11.9	4.2	
9.5	11.8	51.9		6.4	40.9	9.8	A	9.5	50 25.0	24.2		9.3	43.9	48.1		8.7	13.6	48.2	A
10	14.4	57.1		9.5	43.2	4.8		9.7	25.5	58.0		9.8	49.5	25.3		9.3	13.8	2.9	
9.1	18.7	34.6	A	9.1	46.8	23.1		9.5	31.9	46.0		9.8	50.8	32.6		9.2	18.5	43.7	A
9.5	20.7	12.5		9.0	52.9	12.4		9.3	45.4	45.0		9.8	57 0.7	25.3		9.2	20.2	49.7	A
9.3	32.9	56.2		9.5	44 19.0	41.5		8.8	56.0	26.1		9.7	1.1	31.8		9.0	25.1	14.5	
9.1	34.5	13.0		9.7	28.3	20.0		9.2	57.7	8.2		9.1	5.3	46.4		9.3	33.2	27.6	
9.5	39.4	49.0		8.8	30.3	16.3	A	9.8	51 6.4	8.1		9.4	8.8	57.6		9.2	48.6	44.2	
9.1	52.1	30.6	A	9.0	38.2	5.0	A	9.8	7.6	32.9		10	9.5	53.7		8.7	58.4	36.4	A
9.4	54.6	57.5		9.5	48.1	52.4		9.0	13.5	55.5	A	10	15.6	21.0		9.1	4 6.1	23.1	
9.4	38 14.6	58.6		9.3	52.8	36.0		9.4	13.8	39.7		9.6	16.7	57.6		9.0	14.2	13.4	
9.6	18.9	20.7		10	45 10.8	56.5		10	16.0	36.8		9.4	26.2	21.1		9.8	32.4	37.4	
9.4	20.2	21.6		9.5	13.0	46.1		9.2	22.5	45.2		10	29.8	30.6		9.5	33.5	12.6	
9.8	32.8	7.2		9.2	14.6	17.0	A	9.8	46.9	20.9		9.4	31.0	55.3		8.5	5 6.1	52.0	A
9.0	37.4	20.2	A	9.8	16.4	14.9		8.8	48.0	17.4		9.2	36.5	17.4		9.5	25.5	42.6	
9.5	39.5	39.4		9.5	20.5	45.1		8.8	48.6	31.9		9.8	38.4	1.2		9.5	35.9	5.5	
10	49.8	8.8		9.7	48.2	12.9		8.5	53.7	7.3	A	8.6	58 1.2	22.0	A	9.5	52.5	44.0	
9.7	39 0.9	16.8		9.5	56.6	41.7		9.4	57.4	47.8		8.9	6.1	59.0	A	9.3	58.4	13.3	
9.5	3.4	25.5		8.0	46 15.1	25.2	A	9.1	59.8	57.8		8.9	10.2	22.0	A	8.8	6 13.3	36.5	
9.0	20.5	58.1		9.1	16.4	41.8	A	10	52 0.3	11.6		9.6	11.6	10.1		10	15.0	32.0	
9.1	36.3	5.1		8.3	16.9	16.8	A	8.5	10.5	2.7	A	6.4	15.0	19.3	A	9.2	33.4	38.8	
9.5	41.9	22.5		9.8	31.2	56.0		9.5	21.2	27.5		9.8	17.7	58.7		8.9	35.8	1.2	
9.5	53.4	6.4		9.5	37.3	7.0		9.8	24.0	54.9		9.0	28.6	40.3		9.5	38.1	20.4	
9.5	40 7.3	41.9		9.3	38.3	2.9	A	9.4	33.6	9.4		9.4	29.8	57.3		9.8	38.6	36.5	
9.4	9.2	38.3		9.8	40.6	5.6		8.4	44.9	57.6	B	9.7	43.3	12.0		9.5	39.7	24.5	
9.3	14.5	12.6		9.2	42.1	15.9	A	9.1	49.1	4.7	A	10	44.9	20.5		8.8	43.8	1.2	
9.8	29.7	59.8		9.4	44.6	12.5	A	9.3	50.5	17.8		10	46.8	15.4		9.4	7 7.2	28.9	
9.1	32.8	40.6		9.4	45.0	30.0		8.0	54.6	4.3	A	9.5	48.1	19.3		9.3	7.3	6.2	
9.5	32.9	20.3		9.0	48.9	42.0		8.8	53 12.1	21.7	A	9.7	59 6.4	31.8		9.4	10.5	19.4	
9.3	39.3	49.4		9.4	50.2	11.3		9.4	13.7	24.8		9.5	20.9	0.8		9.8	21.9	40.1	
10	47.9	7.7		9.5	57.2	12.4		9.1	17.5	32.0		9.3	22.5	1.6		8.8	23.7	13.5	
10	50.9	7.0		9.1	58.4	0.9	A	9.2	18.7	52.0		9.4	25.6	48.0		9.3	27.4	21.9	
9.5	53.1	31.2		9.5	59.3	10.8		9.6	19.3	54.1		7.5	32.9	28.7	B	9.1	32.1	13.8	

2301—2360				2361—2420				2421—2480				2481—2540				2541—2600			
	8h	−19°			8h	−19°			8h	−19°			8h	−19°			8h	−19°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.3	7 34.2	11.8		9.5	13 30.0	36.7		9.8	22 32.0	4.9		9.5	31 10.8	0.6		9.8	43 24.3	38.5	
9.8	42.7	1.0		9.0	39.5	49.2	A	9.3	44.5	8.3		9.3	17.4	1.2		10	36.3	38.4	
9.1	44.5	12.6		8.7	41.9	17.5		9.4	51.9	18.4		8.0	25.0	48.3	A	9.6	41.2	1.4	
9.5	45.6	54.1		8.7	55.7	38.0	A	8.5	23 15.0	37.7		9.4	34.5	45.0		9.0	54.1	15.3	
8.3	54.7	11.3	B	10	58.4	21.8		9.2	21.9	15.4		9.0	42.1	55.7	A	9.5	44 14.6	4.7	
9.4	58.5	25.5		9.4	14 29.3	42.9		9.4	24.6	11.3		8.9	45.7	11.4		9.5	28.5	19.8	
9.4	8 3.1	49.6		9.5	49.0	54.6		9.1	44.8	34.6		9.0	47.8	5.3		9.5	33.1	15.5	
9.5	6.2	27.5		8.5	52.1	5.6	B	9.8	45.4	56.3		9.5	49.2	34.9		7.7	46.1	58.6	B
9.5	17.8	4.7		5.8	52.7	37.0	B	8.3	52.2	48.5	A	6.7	32 7.2	13.7	B	9.3	49.0	45.0	
8.9	22.4	54.9		9.4	15 0.6	55.2		9.5	24 9.1	25.0		9.0	19.8	36.4		10	54.6	21.7	
9.5	31.2	30.9		9.2	4.3	44.5	A	7.8	35.7	48.7	A	9.0	37.0	28.6	A	9.1	45 15.0	53.5	
9.5	41.0	14.9		9.3	4.4	26.0		9.1	37.5	41.1		9.4	37.3	30.0		9.1	22.4	58.8	
9.1	56.7	33.4		9.6	9.5	42.3		10	40.6	7.7		9.8	42.6	1.9		9.1	27.9	41.0	
9.3	58.0	25.1		9.0	18.7	57.7		10	43.7	7.6		9.7	47.7	8.5		9.5	32.2	34.0	
9.1	9 1.0	19.4		8.8	26.2	37.4	A	9.5	50.3	53.8		9.4	50.3	48.9		8.3	53.7	59.4	A
8.9	11.4	16.0		9.8	36.8	40.7		7.7	53.0	1.1	A	9.0	50.4	55.3	A	9.8	46 0.5	6.2	
10	19.8	8.3		9.2	41.5	32.1	A	9.0	58.7	51.2		9.6	33 11.0	26.0		9.1	47 16.6	31.0	A
9.4	23.2	33.8		9.8	47.9	50.0		5.6	59.4	5.2	A	9.5	34 18.6	11.4		7.5	23.2	52.6	A
9.3	23.6	50.0		9.0	16 3.6	18.8		9.1	25 0.3	40.7		9.3	23.3	2.0		9.2	31.1	29.6	A
9.7	25.4	36.5		9.8	14.2	42.9		9.3	10.9	33.8		7.4	35.8	24.0	A	9.8	43.5	58.2	
8.3	28.3	37.1	B	9.8	20.1	6.8		9.0	21.6	45.0	WC	9.8	36.1	16.2		9.5	46.0	39.1	
9.3	35.7	9.5		9.4	29.9	51.6		9.5	24.0	38.5		9.1	41.3	26.5		9.8	52.3	13.3	
9.3	41.5	22.2		9.7	32.3	22.5		8.7	37.9	11.5	A	9.2	44.2	32.7		9.3	48 17.4	36.5	A
9.5	44.1	28.0		9.3	41.6	36.0		8.2	44.8	28.8	B	9.4	35 4.3	22.4		9.3	21.4	27.5	A
9.4	44.9	35.1		9.4	59.5	35.4	A	9.5	52.8	56.4		8.3	5.9	28.8	A	9.5	30.3	13.4	
10	55.9	11.9		8.9	17 2.1	17.3	A	9.1	26 2.6	35.0		9.3	23.0	18.9		8.9	57.3	55.6	
8.2	58.7	35.5		9.5	12.4	20.2		10	7.0	22.0		9.6	47.1	20.6		9.3	49 6.9	32.9	
9.3	10 3.9	6.7		10	15.2	15.9		9.4	12.1	43.5		9.3	50.0	16.7		9.5	23.5	1.3	
9.0	4.3	55.9		9.4	24.3	49.8		9.1	14.2	47.5	WC	9.5	36 9.7	1.2		9.0	24.5	15.2	A
9.5	4.7	8.4		9.6	34.4	18.0		9.5	28.2	26.4		8.9	48.9	33.8		9.3	59.0	4.7	A
9.5	5.9	16.4		9.4	43.4	14.7		9.8	29.9	16.8		9.1	51.7	3.4	A	8.5	50 11.4	36.5	
9.8	14.6	13.5		9.6	47.6	8.2		8.8	58.0	14.7	A	9.5	57.1	7.0		9.1	14.5	50.3	
9.1	17.2	54.4		9.2	59.7	32.9	A	9.0	59.1	16.7	A	9.0	37 2.6	44.2		9.4	18.2	6.5	
9.8	19.7	13.2		9.2	18 2.9	57.2		9.8	27 3.4	2.0		9.1	35.6	6.7	A	9.2	37.9	5.2	
8.5	20.1	28.5		9.4	14.7	41.3		9.5	12.9	12.0		7.3	46.6	44.2	B	9.4	49.7	5.4	
10	35.6	11.0		9.3	27.4	27.2		9.5	25.4	59.7		9.1	55.2	10.8	A	8.8	53.7	6.4	A
9.5	46.1	28.3		9.3	32.9	28.3		8.8	26.8	34.1		9.2	38 4.6	4.7	A	9.8	51 3.5	53.0	
9.1	47.8	41.8		9.4	41.5	31.0		9.3	29.5	21.3		9.1	42.6	8.2	A	9.3	7.8	4.9	A
9.7	51.7	1.5		9.1	19 7.0	22.0		9.1	32.6	45.0		8.9	47.0	40.6		9.4	19.7	23.5	
9.6	11 8.5	34.3		8.7	21.4	30.8	B	9.0	48.9	4.3	A	9.6	51.1	12.4		9.7	23.9	16.5	
9.7	14.3	26.0		9.1	24.5	11.8		9.7	50.8	18.1		9.2	39 2.1	3.3	A	9.5	24.3	35.0	
9.4	14.8	48.4		9.8	33.8	48.9		9.8	59.5	28.0		7.3	47.2	54.0	A	9.6	41.4	38.1	
9.1	28.3	59.3	A	8.8	34.1	8.1		9.7	28 10.9	32.8		9.1	51.5	19.0	A	9.7	56.9	58.0	
8.8	39.9	44.6		9.3	20 0.7	19.7		9.5	14.2	54.2		9.2	40 12.1	23.2	A	9.8	59.2	23.0	
9.3	47.0	19.4		9.5	29.0	38.5		9.4	57.8	49.7		9.4	31.0	6.1		9.1	52 12.9	47.8	A
9.0	54.1	49.0		9.2	50.5	57.4		8.6	58.8	17.1		8.0	37.0	47.0	A	9.2	21.3	59.0	A
9.0	56.1	50.2	A	9.5	52.2	31.2		8.7	59.6	51.0		9.9	39.9	36.8		8.5	24.6	54.3	A
8.9	12 4.1	31.0		9.4	52.6	9.4		9.8	29 8.3	33.4		9.3	41 11.9	38.8		9.1	53.2	18.0	
9.8	24.2	8.1		9.5	54.8	41.7		8.8	26.7	34.7		8.0	15.0	15.1	A	9.9	53 25.5	57.4	
9.5	35.5	54.0		9.7	21 3.2	32.4		9.4	32.1	49.0		9.9	23.1	42.8		9.9	42.5	9.8	
9.7	42.7	42.8		9.5	17.1	43.6		10	41.3	45.6		9.5	24.6	53.8		8.8	59.6	38.8	
9.3	45.4	51.7	A	9.5	21.6	2.0		9.7	53.2	30.0		9.1	25.3	23.2		9.8	54 3.5	14.2	
9.5	48.9	45.9		9.3	21.6	13.4		9.6	30 0.9	17.5		9.9	29.4	14.3		9.8	8.0	33.4	
9.4	55.4	21.5		9.5	24.4	28.5		9.0	5.0	31.6		9.8	52.6	55.4		9.5	24.2	25.3	
7.0	55.8	42.6	A	8.5	26.2	42.9		9.1	7.4	2.3		9.8	58.4	59.3		9.0	41.5	8.2	
10	13 3.2	38.5		9.5	49.0	4.3		9.8	14.0	22.0		9.4	42 28.8	14.2		9.1	43.2	1.0	
9.3	5.2	11.7		9.1	22 0.5	18.2		9.1	27.8	19.8		8.9	43.3	56.5		9.0	55 20.3	28.1	A
9.8	16.6	30.2		9.2	8.3	17.5		9.5	30.4	21.0		9.6	51.2	12.3		10	34.0	33.8	
9.0	18.3	40.0	A	9.5	25.9	18.6		9.5	49.9	42.5		9.3	43 13.1	2.7		9.0	44.9	25.9	A
9.8	24.0	21.3		8.8	30.2	46.4		9.2	55.4	44.3		9.9	20.5	0.4		9.8	56.9	45.8	

2601—2660

m	8h—9h m	s	—19° ′	
9.8	56	23.7	43.9	
9.8		26.0	12.1	
7.7		31.9	58.7	B
9.3	57	7.3	41.1	
8.5		10.9	15.2	A
9.8		27.1	59.6	
9.8		39.8	21.5	
9.6		40.9	15.0	
9.8		55.0	56.2	
8.4		55.6	29.5	B
9.8	58	11.3	19.0	
9.1		15.5	3.1	
9.0		43.3	48.3	
9.1		49.1	31.8	
9.3		55.0	53.9	
9.8	59	1.7	41.6	
8.5		33.6	31.7	A
9.2		35.0	22.8	
9.8		38.1	33.7	
9.8	0	41.7	42.7	
9.8		43.4	3.3	
8.6		45.2	45.8	A
9.4		56.0	57.0	
9.7	1	19.8	54.0	
8.9		25.1	10.8	A
9.8		27.5	0.3	
9.4		39.0	41.3	
9.8		44.1	43.3	
9.8	2	3.0	30.3	
9.8		9.3	56.9	
9.1		14.9	26.5	
9.5		28.0	16.5	
9.2		28.2	31.0	A
9.3		43.7	15.9	
9.8		51.6	43.7	
9.8	3	9.4	23.7	
8.4		13.3	9.0	A
9.1		13.4	2.0	
9.7		20.8	57.9	
9.1		37.3	19.4	A
9.7		39.2	30.7	A
9.7	4	57.9	28.5	A
9.0	5	15.4	21.9	A
6.3		19.2	9.4	A
9.8		25.5	43.1	
9.8	6	1.3	15.3	
9.8		4.9	29.1	
9.8		47.5	47.9	
8.5	7	0.1	9.6	A
9.8		1.2	19.9	
9.8		1.9	34.2	
9.0		8.1	54.2	
8.2		9.6	37.8	A
8.7		10.0	42.3	A
8.2		11.2	22.9	A
9.8		16.3	27.8	
9.5		25.2	12.4	
9.8		34.4	36.9	
8.0		47.3	24.1	A
7.3	8	23.3	30.7	A

2661—2720

m	9h m	s	—19° ′	
9.5	8	23.7	12.7	
9.0		36.9	11.8	
9.6		47.5	19.5	
9.4		53.4	40.0	
9.0		57.8	31.5	A
9.2	9	40.5	27.9	A
9.1	10	13.2	33.2	A
9.0		31.9	49.3	A
9.3		32.8	43.7	A
9.8		39.4	2.4	
9.0	11	14.9	2.0	
9.6		37.7	26.3	
9.0		40.3	45.2	A
8.0		45.8	45.2	A
9.7	12	18.1	57.2	
9.0		28.3	49.7	A
9.5		33.8	39.9	A
9.4		44.2	11.6	
9.7		56.3	59.0	
9.2	13	7.9	59.3	
9.5		10.4	6.6	
9.6		13.6	20.9	
9.8		15.3	32.3	
9.7		21.4	12.3	
9.0		54.7	40.4	A
9.7	14	5.4	12.3	
9.8		14.4	56.2	
9.3		18.1	18.4	
9.0		22.1	33.8	A
9.5		25.4	4.5	
9.8		37.6	28.7	
9.8		50.0	31.6	
9.5		53.3	12.4	
9.3	15	2.9	6.5	
9.3		22.1	37.0	
9.8		30.5	27.7	
9.5		51.2	59.4	
9.6	16	2.1	36.5	
9.4		5.8	56.5	
9.4		17.9	12.0	
9.8	17	19.6	25.7	
9.5		25.3	7.6	
8.9		40.0	30.7	
9.8		51.9	22.6	
9.8		56.5	36.9	
9.4	18	7.6	43.4	
9.8		9.4	16.1	
9.0	19	14.1	45.3	A
9.8		16.7	35.5	
8.2		28.5	28.0	
9.7		30.8	12.2	
9.3		31.9	25.7	
9.5	20	11.3	1.2	
9.1		13.4	29.4	
9.0		16.2	3.0	
9.8		45.6	42.7	
9.8		48.7	41.0	
9.8	21	6.8	25.9	
9.4		9.7	10.4	
9.8		27.4	30.1	

2721—2780

m	9h m	s	—19° ′	
9.6	21	54.4	37.8	
10	22	1.1	15.4	
8.0		18.5	47.9	A
9.3		55.9	57.4	A
9.1		56.9	3.9	
9.0		59.0	45.0	
9.8	23	16.0	53.8	
9.2		29.8	11.4	
8.5		34.6	10.2	A
9.7		53.5	58.1	
9.1		58.9	44.1	A
9.4	25	4.0	59.5	
9.7		4.4	19.3	
9.0		15.2	29.5	
9.8		16.4	21.7	
9.5		21.3	41.9	
9.2		27.7	28.6	
9.8		31.8	53.8	
9.9	26	7.2	30.1	
9.8		19.2	26.0	
10		33.2	38.2	
9.8		40.5	38.7	
9.8	27	4.6	23.5	
8.5		9.5	15.2	
9.1		17.5	10.6	
9.5		25.4	10.8	
9.2		48.4	58.6	
9.8	28	0.0	2.6	
9.1		4.1	34.0	
9.8		25.3	42.9	
9.8		29.4	18.8	
9.8	29	9.7	17.1	
8.4		16.3	54.6	A
9.9		28.1	48.2	
9.0		34.2	44.9	
9.8		34.8	27.3	
9.4		47.1	40.6	
9.6	30	6.1	10.0	
9.8		17.2	44.4	
9.8		17.3	35.2	
9.3		23.0	56.4	
9.5		43.7	58.3	
0.3	31	5.1	37.5	
9.4		13.6	40.8	
9.6		28.4	13.8	
9.6		31.4	16.7	
8.6		37.6	53.5	
9.8	32	0.2	51.8	
9.7		6.4	23.5	
9.3		7.9	31.5	
9.4		11.7	36.6	
9.6		47.6	55.7	
9.4		51.9	24.3	
9.0		57.9	58.1	A
9.8	33	18.1	46.6	
9.0		20.0	9.8	
9.1		21.6	57.1	A
9.7		32.2	53.7	
9.1		40.0	34.1	
10	34	22.9	30.0	

2781—2840

m	9h m	s	—19° ′	
9.8	34	24.2	38.5	
9.4		24.8	20.4	
9.4		54.9	14.0	
9.8	35	0.5	52.5	
8.6		0.7	41.9	
8.5		6.3	30.7	
9.6		8.3	27.1	
10		30.4	45.6	
9.5		33.8	21.1	
8.5		38.0	49.0	
9.5		54.1	8.2	
10	36	0.0	46.4	
9.3		24.1	54.3	
9.5		26.7	1.2	
7.0		45.4	42.1	B
9.8		48.7	0.5	
9.5	37	1.3	32.7	
9.2		18.4	38.5	
9.5		45.3	8.2	
9.1		47.3	40.0	
9.0		48.4	16.4	
10	38	5.9	25.0	
9.8		9.5	36.7	
9.8		13.4	15.0	
9.4		25.1	4.0	
9.3		26.6	0.2	
9.8		29.4	47.0	
9.8		31.0	32.0	
8.2		35.3	40.5	B
9.5		55.9	48.7	
8.8		56.6	1.8	B
9.0	39	11.4	46.2	A
7.0		19.5	3.5	B
9.1		22.8	46.9	A
9.8		26.4	16.3	
9.7		28.1	41.7	
9.5		33.7	27.2	
9.7		36.7	18.7	
9.9		54.3	41.8	
10	40	13.4	52.7	
8.5		13.4	42.4	A
9.6		16.2	10.9	
9.4		17.5	4.8	
9.9		33.6	26.6	
9.9		40.7	35.7	
10		44.5	2.5	
9.8	41	10.2	36.4	
9.9		16.6	26.5	
9.4		39.6	30.6	
8.2		43.0	17.1	A
9.2		55.9	9.5	
9.2		57.7	9.5	A
10	42	18.3	53.1	
10		34.5	17.7	
10		36.7	3.3	
9.6		50.6	9.5	
10	43	5.8	50.2	
9.5		14.5	0.2	
9.0		14.6	35.9	A
9.9		40.2	50.0	

2841—2900

m	9h m	s	—19° ′	
9.6	43	50.8	6.0	
8.5	44	0.5	26.3	A
9.0		6.2	15.8	A
8.7		15.5	27.6	A
9.8		19.9	18.4	
9.7		29.8	6.0	
9.8		40.2	52.6	
9.2		45.0	1.2	
8.6	45	1.4	5.0	A
8.0		1.5	21.8	A
9.4		28.5	31.5	
9.8		48.6	37.1	
10	46	4.9	16.2	
9.5		26.6	35.7	
10		27.3	16.8	
8.8	47	8.7	8.8	A
8.4		33.5	36.9	A
9.3		36.4	12.8	
9.3		37.3	46.0	
9.6		42.1	59.9	
9.4	48	1.8	10.6	
9.3		3.6	30.2	
9.1		11.7	8.0	
9.2		38.4	28.7	A
8.0		39.4	17.8	A
9.6		40.3	58.7	
9.1		46.3	0.6	
9.8		52.7	14.7	
9.4		58.8	8.8	
8.7	49	11.0	15.6	A
8.0		24.2	1.5	B
9.5	50	9.4	42.0	
9.8		28.1	40.4	
9.7		35.9	35.0	
9.7		36.1	53.3	
9.5	51	25.0	44.9	
9.0		36.3	36.1	
9.8		47.2	24.1	
9.7	52	2.3	39.4	
9.8		13.8	8.5	
9.1		26.9	14.6	
9.4		28.1	16.2	
8.0		28.5	28.6	B
6.4		29.4	39.8	B
9.4		37.6	21.8	
9.8		47.3	35.7	
9.4		57.6	48.5	
10		59.0	50.1	
8.9		59.9	28.7	
9.2	53	46.2	15.0	
9.5		51.1	57.1	
9.5	54	43.1	34.1	
10		49.9	13.7	
9.5	55	1.2	49.7	
8.6		20.4	4.2	
9.2		43.2	52.2	
7.0		47.1	43.6	B
9.8		50.0	28.8	
9.1	56	6.8	2.8	
9.8		32.4	1.5	

2901—2960				2961—3020				3021—3080				3081—3140				3141—3200			
	9h—10h	−19°			10h	−19°			10h	−19°			10h	−19°			10h—11h	−19°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.9	56 59.1	41.5		10	8 53.6	16.1		9.4	20 49.8	0.1		9.4	35 34.0	43.7		9.8	49 53.4	15.2	
9.0	57 8.7	12.2		9.4	9 6.7	16.7		9.2	21 9.1	32.3		9.5	35.9	33.4		9.3	53.6	23.5	A
9.3	30.8	7.0		9.4	42.1	45.6		9.0	31.8	56.3	A	9.4	36 9.2	0.8		9.5	50 1.6	23.0	
9.5	58 12.0	46.6		6.6	53.0	56.6	B	9.8	22 3.8	6.7		9.8	22.1	33.4		9.4	7.1	22.8	
9.8	19.3	48.3		8.7	56.1	46.0	A	10	40.1	24.4		9.5	32.8	27.2		9.7	24.2	14.7	
9.8	48.1	56.8		9.8	10 2.5	33.3		10	54.9	9.6		9.6	33.2	12.3		10	51.5	23.7	
9.8	56.2	9.1		10	36.9	5.3		9.8	23 15.0	38.7		9.8	59.3	56.2		9.0	51 1.8	12.9	
8.5	59 3.0	50.6		9.2	51.1	44.2	A	8.7	15.8	51.3	A	10	37 1.5	10.4		9.8	15.4	55.7	
9.0	8.2	5.0		10	55.8	12.9		8.6	22.8	6.7	A	9.1	10.9	18.9		9.1	43.2	46.3	
9.8	36.6	49.3		9.1	11 29.0	46.0	A	9.6	30.7	42.1		9.8	18.3	28.0		8.8	47.1	16.6	
9.1	42.9	33.7		9.4	42.7	8.4		9.6	32.9	40.4		9.8	38.8	54.9		10	48.1	37.5	
9.7	43.6	26.7		9.5	47.0	42.7		9.8	35.1	19.0		9.3	54.8	56.5		10	52 28.7	51.6	
9.6	46.3	3.0		9.3	47.4	24.8		9.0	38.4	34.6		9.4	38 3.0	46.5		9.8	39.2	46.0	
9.7	55.8	21.2		8.5	12 5.4	34.8	A	8.8	48.3	21.4		9.8	19.8	43.7		8.3	53 1.7	16.3	A
8.8	0 8.7	5.9	A	9.5	14.5	41.1		8.9	24 15.7	7.3		9.2	39.0	51.1		9.4	19.1	13.1	
9.2	24.2	28.7		9.0	30.6	17.2	A	9.1	41.0	54.0		9.1	56.8	24.2		9.1	30.5	2.8	
9.8	29.8	20.6		9.0	33.5	46.7	A	9.3	50.9	3.4		8.5	59.7	6.0		8.5	38.0	32.4	A
7.2	30.2	0.2	A	9.9	39.0	40.4		8.8	25 1.9	36.2		9.8	39 21.6	29.9		9.9	39.7	56.8	
9.3	35.1	17.8		9.1	13 12.6	15.5		9.7	14.0	50.5		10	24.5	59.1		9.4	54 10.6	22.1	A
9.6	50.3	44.7		9.5	16.0	35.5		9.4	22.3	57.4		9.8	37.6	29.2		9.5	13.0	11.0	
9.7	58.6	54.1		9.6	52.8	13.0		9.8	52.5	46.4		8.9	53.6	6.9	A	8.9	19.2	1.7	A
9.5	1 9.4	37.5		9.5	14 15.8	15.9		8.9	54.4	18.2		10	40 37.5	5.6		9.1	33.5	8.4	A
9.6	10.3	10.4		9.8	15.9	47.1		9.8	26 31.2	13.9		9.5	45.0	18.5		8.0	38.0	16.4	B
8.6	16.4	48.7	A	10	45.8	53.7		8.5	32.0	26.2		8.0	51.6	34.5	B	9.1	44.9	59.7	
9.8	29.8	19.8		9.4	47.1	11.4		9.1	32.6	38.8		9.6	41 15.3	53.7		9.4	55 11.9	2.1	
7.2	29.9	1.9	A	7.5	15 6.0	50.5		9.5	39.8	10.2		9.6	17.2	54.3		9.0	56 13.0	52.5	
9.6	43.1	51.8		6.5	16.9	8.1	B	9.5	39.9	6.9		9.8	24.5	2.2		9.8	48.2	32.8	
8.8	50.5	36.6	A	8.5	17.7	56.7		9.2	27 15.9	56.2		9.0	55.4	38.6	A	8.8	49.0	58.4	
10	2 19.7	22.9		9.4	23.9	50.0		9.8	26.6	1.1		9.5	42 13.6	33.2	A	9.1	57 17.8	36.2	A
9.8	44.5	53.1		9.5	25.7	41.4		9.0	31.2	3.7		9.3	21.9	15.5		9.8	58 21.4	45.4	
8.8	53.1	15.4	A	10	32.2	20.7		9.5	40.6	2.1		9.4	25.0	9.3		9.1	34.9	19.1	
9.3	3 1.4	51.3		9.5	16 0.3	42.3		10	28 11.0	56.3		9.8	36.7	32.3		8.2	42.8	37.5	A
9.6	17.8	38.2		10	38.8	0.1		9.7	23.1	13.4		8.8	43 21.9	25.2		9.5	59 4.9	50.0	
9.6	50.0	58.9		8.2	43.7	30.3	A	9.0	26.2	38.6		8.3	39.8	15.8		9.4	7.8	8.9	
9.4	58.2	58.2		9.9	46.7	15.8		9.3	51.9	32.8		9.6	54.1	51.1		8.9	19.3	7.4	A
9.6	4 3.1	58.1		8.8	48.3	11.2	A	9.1	53.2	14.2		9.5	44 15.6	45.9		8.2	29.0	54.8	A
8.8	5.7	14.5	A	10	52.6	9.1		9.4	29 4.8	43.3		9.1	43.3	23.7		9.6	37.6	20.9	
8.5	6.9	55.9		9.5	17 8.7	59.5		9.5	5.1	59.8		9.3	45 1.7	14.9		9.2	57.1	15.0	
8.6	18.3	31.0		8.7	11.0	3.0	B	10	37.5	1.5		9.0	11.8	1.5		9.8	0 54.8	6.5	
9.5	26.0	13.7	A	9.8	14.6	28.1		9.3	38.8	45.7		9.7	53.5	58.8		9.8	1 10.8	41.6	
9.5	27.0	5.8		8.8	30.0	14.5	A	9.7	41.3	50.9		9.7	59.4	17.0		9.5	20.1	37.5	
9.8	33.8	33.0		10	18 5.4	2.7		8.0	48.6	8.0	A	7.0	46 2.5	50.8	A	9.3	22.2	20.1	
9.8	56.0	16.0		9.0	6.8	52.0		9.8	30 19.5	6.0		9.2	7.6	18.0		8.0	35.7	16.1	B
9.2	5 4.9	7.8	A	10	13.6	4.7		8.7	40.7	32.5	B	9.1	19.8	24.0	A	9.0	41.0	18.9	
9.9	5.9	15.4		8.1	19.0	4.1	A	9.4	54.5	21.1		5.0	24.2	21.1	B	7.5	57.7	43.3	B
9.5	18.6	18.4		7.7	55.2	35.3	B	9.2	59.1	26.2		8.7	29.8	27.8	A	9.0	2 3.5	22.5	
9.0	35.9	6.3	A	9.2	56.9	15.1		9.8	31 0.5	10.4		10	35.7	11.1		9.8	19.6	0.6	
9.5	57.2	24.0		8.9	19 5.4	2.9	B	9.7	25.2	6.4		9.2	40.8	28.7		9.9	28.2	18.3	
9.1	6 21.1	27.3		9.3	6.9	11.9		10	43.4	6.2		9.8	58.9	47.8		9.8	3 1.7	55.7	
9.0	22.4	14.9	A	9.5	11.1	26.7		8.0	46.2	49.4	A	10	47 7.2	22.8		8.8	4.7	20.1	
9.5	36.1	20.0		9.6	27.1	31.5		9.2	32 19.7	49.5	A	8.0	24.2	27.6	A	9.8	9.2	55.5	
9.3	58.6	11.3		8.7	41.2	42.8	B	9.8	36.5	28.1		9.4	29.8	41.9		8.8	10.3	37.0	
9.3	7 9.0	0.6		10	57.0	18.2		9.9	33 6.8	3.0		10	45.3	41.9		9.9	50.0	28.1	
9.8	18.1	32.9		9.8	20 3.5	24.2		9.8	23.2	53.2		6.5	48 6.9	53.5	B	9.9	4 13.6	50.9	
9.8	26.0	25.0		10	31.3	29.3		9.4	38.1	48.7		9.5	12.2	35.4		8.8	23.9	23.1	
9.5	47.6	28.0		9.5	33.8	34.4		10	47.4	5.5		10	46.7	12.0		9.8	27.1	43.9	
9.3	8 33.6	10.4		9.0	35.9	39.9	A	9.1	58.5	32.6	A	8.8	49 14.7	9.9	A	10	41.1	50.9	
9.5	38.2	41.0		9.1	40.8	42.8	A	9.6	59.4	29.5		9.1	17.6	29.5	A	7.5	44.2	21.6	B
9.2	38.8	11.3		9.3	43.5	46.3	A	9.0	34 2.5	33.5	A	9.1	18.5	49.4		9.7	5 15.2	18.9	
9.0	45.4	6.9		9.4	46.9	0.0		7.5	35 21.6	50.4	A	9.0	39.8	53.4		10	41.1	56.9	

3122: 1:58 51′1″2 B_1, Ep. 1885.30

3201—3260

m	11h m	s	−19° ′	
9.7	5	57.4	59.4	
8.2		59.0	45.3	A
9.4	6	0.8	6.2	
10		20.3	20.2	
8.2		27.0	39.7	A
8.7		46.4	8.0	A
9.9		57.2	14.6	
8.0	7	32.5	52.0	
9.8		49.4	40.8	
9.0	8	15.6	4.6	A
9.8		25.8	27.1	
9.8		32.9	36.3	
9.3		48.7	20.7	
8.8		50.6	21.5	
7.6	9	4.5	53.9	B
10		8.0	21.9	
9.4		19.4	40.0	
8.9		21.4	56.7	
9.7		32.5	54.9	
9.8		33.9	6.3	
8.2	10	17.7	58.5	A
9.7		20.0	18.8	
9.5		46.7	57.7	
9.1		49.6	51.4	A
9.8		53.7	15.0	
9.1	11	1.6	54.2	A
10		35.0	44.4	
10		43.4	26.7	
8.8		54.8	55.0	A
8.0		57.3	26.0	
9.0	12	3.0	2.3	
9.5		10.0	41.4	
9.4		33.9	2.9	
9.4		37.0	2.5	
10		42.6	15.8	
9.1	13	4.1	59.0	A
8.7		11.5	52.9	A
9.2		23.0	13.5	
9.8		24.2	30.1	
10		33.4	38.1	
9.5		58.3	29.9	
8.7	14	12.9	39.3	A
9.4		21.3	32.5	
9.4		22.0	20.7	
8.7		33.9	42.6	A
9.6	15	1.3	21.0	
9.4		3.6	23.7	
9.6		8.7	56.6	
8.0		31.3	4.3	
7.3		44.8	49.6	B
8.7	16	3.2	11.5	
9.8		8.3	3.6	
9.2		32.9	19.2	
8.3		39.3	7.0	
10		44.4	50.2	
9.3		44.8	22.2	
9.8		51.1	21.6	
9.4	17	21.3	52.9	A
9.2		29.5	2.5	A
9.5		33.1	32.6	

3261—3320

m	11h m	s	−19° ′	
9.3	17	38.2	1.6	
9.8		57.1	32.8	
9.7		57.4	57.1	
9.3	18	17.4	58.0	
7.0		48.2	46.8	A
9.5		49.4	16.8	
9.1		55.4	12.5	A
9.8	19	48.2	23.1	
9.7		58.4	16.9	
8.7	20	2.9	59.5	A
9.1		10.1	47.6	A
8.9		50.6	14.5	
9.8	22	11.8	23.5	
9.8		24.3	9.7	
8.8		53.4	25.2	
9.7		58.0	38.2	
9.3	23	5.5	25.0	
9.2		24.5	7.6	
9.4		26.0	52.1	A
8.8		28.1	5.8	
8.8		36.2	1.7	
8.0		41.3	23.8	A
9.6		47.4	40.0	
9.4	24	29.3	57.0	
6.3		33.0	58.5	B
9.4		36.5	17.4	
9.8		49.4	50.3	
9.1	25	5.4	7.0	A
9.5		16.3	58.3	
10		37.8	0.3	
8.7		49.8	1.2	A
9.1	26	12.3	42.3	A
8.7		20.9	44.3	A
9.8		22.7	33.1	
9.8		24.8	1.9	
9.2		27.3	5.1	
10		35.9	50.0	
9.0	27	19.1	29.9	
9.9		41.3	5.9	
10		48.6	30.7	
9.1		50.2	35.2	
8.0		55.3	45.0	A
9.5	28	0.8	46.1	
9.2		11.7	42.7	A
9.8		18.1	58.3	
9.3		37.2	8.7	
9.4		58.3	51.2	A
9.1	29	23.7	43.3	A
9.1		30.1	59.4	
9.1	30	2.5	31.6	
10		37.4	24.4	
8.8		51.3	54.6	A
10	31	13.2	14.8	
9.6		15.0	20.8	
9.1		23.1	42.1	A
9.9	32	7.5	50.0	
9.8		9.4	33.5	
9.3		35.6	56.7	A
9.4		46.6	55.6	A
9.5	33	0.5	42.9	A

3321—3380

m	11h m	s	−19° ′	
10	33	4.5	48.0	
9.5		24.8	50.7	
10	34	10.7	0.5	
9.1		21.7	14.1	
9.4		24.4	15.9	
6.3		44.8	29.0	B
10	35	20.3	35.1	
8.3	36	0.4	59.7	
7.2		3.5	1.0	B
9.4		18.3	37.1	
9.7		28.0	9.5	
10		52.9	55.6	
7.2	37	5.4	53.1	B
10		6.3	13.5	
8.8		16.6	36.7	
9.4		43.3	5.6	
9.5	38	29.8	21.3	
9.5		33.6	25.5	
10		40.3	39.4	
9.8		56.9	55.7	
9.8	39	17.7	59.8	
9.6		43.7	17.0	
9.5		54.5	12.4	
9.8	40	6.7	49.9	
9.1		8.4	20.4	
9.8		17.6	16.2	
9.3		41.0	47.1	
9.5		59.7	15.0	
9.0	41	16.9	22.7	
9.1		37.1	5.9	A
9.8		46.9	15.2	
8.6		53.0	32.2	
9.5	42	41.5	38.2	
9.0		56.1	1.6	A
10	43	2.9	32.6	
10		16.5	36.8	
10	44	7.3	25.0	
9.9		8.9	36.5	
10		11.5	20.3	
8.3		57.8	10.3	A
9.5	46	3.4	49.5	
8.6		15.7	32.8	A
10		27.0	53.1	
8.6		28.8	41.8	A
9.8		55.6	45.3	
9.8		58.9	19.8	
9.4	47	2.9	57.5	
10		26.3	8.1	
9.2		31.8	41.7	A
9.6		52.5	59.0	
9.8	48	0.1	46.0	
9.0		29.3	2.9	
9.4		36.8	50.0	A
9.0		39.1	10.6	
9.2	49	40.3	17.4	
9.6	50	19.0	55.4	
10		25.1	29.1	
10		41.7	18.0	
9.7		50.1	54.5	
9.0		56.9	16.4	

3381—3440

m	11h—12h m	s	−19° ′	
10	51	16.5	32.2	
8.0		44.3	32.2	
9.9		50.8	11.0	
9.9	52	24.7	45.8	
9.3		47.9	55.9	
9.8		56.0	41.7	
10	53	13.9	36.4	
9.5		25.0	37.9	
9.5		27.8	14.7	
8.3		30.5	49.6	
9.2		32.1	12.2	
7.5		58.3	51.3	B
9.6		59.6	18.0	
9.9	54	34.6	29.8	
7.6		37.8	59.9	B
9.8		59.7	31.6	
9.4	55	29.2	24.9	
9.6		40.1	38.2	
9.9	56	23.0	58.6	
9.0		36.6	45.0	A
9.4	57	6.4	0.8	
9.0		6.6	49.0	A
9.7		49.1	41.6	A
9.4	58	0.6	12.2	
9.1		36.7	58.4	A
9.0		40.5	28.8	
8.3		48.4	14.0	B
8.6	59	9.7	55.9	A
9.4		30.0	40.3	A
9.5		43.4	46.1	A
9.5	0	11.9	28.5	A
9.4		23.0	26.0	A
10	1	13.3	14.1	
9.7		15.1	16.1	A
9.0		32.2	7.6	A
9.5		55.3	48.3	
8.8	2	19.2	4.4	A
9.2		22.9	14.2	
9.0		23.2	0.8	A
9.5		28.3	47.6	
8.5		43.8	22.4	
9.2		47.8	28.9	
9.2	3	45.2	13.1	A
7.2	4	22.1	7.4	B
9.1		50.6	10.9	
7.7		51.4	3.9	A
9.6	5	0.0	59.2	
8.9		7.9	18.5	
8.7		10.6	0.6	A
9.8		18.2	31.3	
9.1		18.5	14.7	
9.5		28.2	32.6	
9.5		39.2	34.7	
8.7		40.0	55.8	
9.6		42.7	49.9	
9.8	6	3.6	28.9	
7.5		17.9	31.1	
9.3		19.2	15.6	A
9.6		20.0	33.6	
10		46.1	47.9	

3441—3500

m	12h m	s	−19° ′	
8.7	7	0.2	18.1	A
9.7		27.6	37.2	A
9.5		51.2	18.6	
10		57.3	59.4	
7.2	8	7.9	43.3	A
9.1		21.4	18.2	
9.8		25.4	3.7	
10		47.9	57.9	
10		53.5	42.2	
9.6	9	8.1	19.0	
9.9		44.3	10.7	
10	10	12.2	49.8	
9.8		12.5	41.1	
9.8		36.4	23.2	
9.8		47.3	12.2	
9.7		57.9	21.4	
10	11	42.9	44.8	
8.9	12	14.8	32.9	
9.0		16.8	7.7	
9.5		37.4	26.4	
9.6		40.3	27.8	
9.5		53.2	3.6	
9.1	13	9.8	48.9	
8.5		11.6	25.4	B
9.1		17.2	2.0	
8.5		19.7	5.1	A
9.5		27.9	21.0	
10		41.5	46.8	
9.1		44.3	54.3	
9.0		52.3	36.0	
9.8	14	24.4	10.2	
9.8		54.4	16.6	
9.0	15	19.2	35.5	
9.3		42.5	14.5	
9.4		50.1	3.9	
9.1		55.7	27.5	
9.2		59.2	55.0	A
9.0	16	5.1	6.2	
7.7		7.4	16.9	B
9.6		14.1	11.7	
9.7		41.8	8.9	
9.4		50.1	8.4	
8.2	17	10.7	16.0	
8.6		14.8	59.7	A
9.5		16.1	28.8	
8.8		22.5	4.3	
9.9		51.6	39.0	
10	18	4.5	40.5	
9.4		12.0	33.8	
9.7		40.4	59.0	
9.7	19	27.1	16.5	
9.0		36.0	10.6	A
8.6		37.3	9.7	A
8.5		44.5	37.5	A
10	20	25.0	45.5	
9.3		42.9	18.2	A
9.3		53.4	54.4	
9.8	21	29.0	28.6	
9.8	22	28.2	59.5	
9.1		31.8	9.8	A

3245: 34ʰ89 42′43″6 B_1, Ep. 1885.30

3479: 7ʰ30 16′54″3 B_2, Ep. 1885.33

3501—3560				3561—3620				3621—3680				3681—3740				3741—3800			
12h		−19°		12h		−19°		12h—13h		−19°		13h		−19°		13h		−19°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.9	22 34.4	49.9		8.1	38 21.1	16.8	B	9.8	54 39.7	15.7	A	8.9	17 42.6	25.1	B	9.9	39 25.8	6.8	
9.5	58.9	34.7		10	38.1	32.5		9.9	46.4	21.2		8.2	18 6.1	3.4	A	10	28.9	55.3	
9.0	23 8.4	42.5	A	9.5	42.9	22.9		9.5	55 0.4	7.4	A	9.5	27.8	49.6		9.0	38.1	37.9	B
9.1	19.2	56.0		9.4	39 5.5	49.5		8.5	15.8	42.5		9.8	35.2	59.5		8.5	45.2	35.5	A
9.9	26.1	15.9		9.8	6.6	44.6		9.3	17.6	24.0	A	9.6	19 10.3	9.6		9.5	40 4.2	47.2	
8.5	29.9	31.0	A	10	16.1	14.5		9.8	35.3	42.1		9.1	10.4	36.2	A	9.6	7.9	9.7	
9.7	32.5	13.3		8.7	17.9	8.6		9.5	36.6	32.4		9.4	10.4	57.2		9.0	20.5	47.1	
9.5	57.3	4.6		9.8	40 3.5	46.1		9.1	56.5	38.9	A	9.0	19.5	35.0	A	9.5	41 32.8	8.9	
9.2	24 50.0	41.3	A	9.8	25.0	28.7		6.1	56 0.9	47.8	B	9.8	53.0	28.8		9.1	32.8	46.0	
9.4	25 16.2	5.2		9.5	47.0	20.4		9.8	5.3	27.0		9.8	20 21.2	4.1		9.7	37.1	30.9	
8.5	18.2	3.0		9.4	52.5	38.8		9.7	30.4	35.8		8.0	22 9.9	33.7	A	9.5	41.9	0.5	
8.6	26 1.7	42.1	A	9.2	53.5	30.1		9.8	57 47.2	13.7		10	23 3.8	35.5		8.9	42.2	18.1	
9.8	29.6	46.3		9.0	41 2.6	27.7		9.1	58 22.3	27.0	A	10	46.7	24.6		9.5	42 16.3	5.6	
9.4	39.7	24.2		9.3	15.6	25.4		8.5	41.2	16.5	A	9.8	24 51.7	43.2		6.8	38.8	10.3	A
9.5	43.7	9.4		8.8	17.6	10.9		8.5	59 19.7	21.9	A	9.4	25 1.1	3.3		9.0	44.3	50.7	
9.3	57.7	25.8		9.5	27.5	26.8		9.7	21.8	32.1		7.5	19.8	14.5	A	10	43 36.0	32.8	
9.3	27 33.1	3.5		8.5	31.9	49.1	B	9.5	43.5	29.0	A	9.0	36.3	51.8	A	9.0	44 2.5	11.5	A
9.7	55.3	56.7		9.0	32.7	30.4		9.1	0 11.6	4.2	A	9.6	37.0	16.9		9.8	35.2	5.5	
9.6	28 2.6	58.4		8.9	51.4	6.3	A	8.8	1 37.1	49.1		10	52.9	22.8		10	37.9	44.9	
8.3	16.6	39.7	B	9.6	42 12.0	26.8		9.5	41.0	42.7		8.8	26 30.6	42.7	A	9.2	54.0	9.9	
6.7	23.1	43.7	B	9.7	18.2	14.9		7.5	45.1	21.1	A	9.7	51.2	26.4		9.7	45 3.8	23.5	
9.5	41.2	13.8		8.3	31.9	34.6		9.4	2 7.3	28.9	A	9.2	27 16.6	41.4	A	9.5	24.4	28.3	A
9.8	42.9	18.7		10	33.0	27.5		9.3	8.4	34.0	A	9.5	44.6	38.0		9.4	28.3	17.4	A
9.3	56.9	15.6		10	44.0	2.8		10	3 16.2	4.9		9.6	45.4	5.1		9.4	53.8	56.8	
9.2	58.3	43.3		9.8	43 8.2	17.5		10	18.1	11.0		9.1	28 1.6	25.8		9.8	46 20.2	6.8	
10	29 17.8	9.6		9.1	21.9	16.7		8.7	57.6	54.3	A	9.6	46.6	40.3		9.6	30.0	16.8	
9.2	22.0	7.6		10	25.4	3.6		9.5	4 12.3	47.2		9.7	52.3	26.1		9.5	31.7	26.6	
8.5	36.8	16.7		9.0	33.9	34.1		8.7	5 36.0	30.0	A	9.4	29 36.3	4.2		9.8	47 18.4	27.2	
9.2	30 10.4	20.6	A	9.2	44 25.5	31.9	A	9.2	58.9	27.6	A	8.7	56.1	25.3		8.9	19.1	37.5	
9.0	50.8	15.4	A	10	42.8	44.9		9.5	6 0.2	12.1		9.6	30 18.0	0.2		9.5	19.7	20.2	
9.8	31 8.3	38.7		9.5	54.8	37.2		6.2	25.2	9.8	A	9.0	25.5	41.1		8.5	26.4	24.4	
9.0	15.9	43.7		8.9	45 29.3	25.4	A	9.2	7 31.5	17.1		9.8	50.9	16.8		9.0	53.8	32.2	A
9.4	19.8	28.5		8.5	49.4	5.1	A	6.1	8 8.9	10.1	A	9.1	31 4.3	7.1	A	9.5	48 0.6	51.1	
9.4	26.9	35.9		9.2	46 25.3	26.5	A	8.8	21.3	49.7		9.5	10.2	20.6		9.1	26.6	8.1	
10	32 8.4	11.4		10	26.7	5.1		9.5	31.8	59.3		10	32 25.6	26.3		10	36.3	41.1	
9 8	29.8	50.4		9.4	47.8	15.7		9.4	56.9	2.2		9.6	33 22.7	3.2		9.9	36.9	46.3	
9.7	38.4	12.7		6.7	49.4	18.4	B	9.4	57.5	19.0		9.5	29.4	37.6		9.6	49.1	6.3	
9.9	33 15.2	35.4		9.8	47 39.1	54.7		9.1	9 50.3	44.6		9.8	44.2	14.3		9.1	49 4.8	24.0	A
9.2	27.7	18.9		9.6	48 6.6	49.0		10	10 15.9	11.7		9.5	34 13.8	45.0		9.4	5.5	55.5	
7.5	54.5	49.1	B	9.4	21.3	14.2	A	9.2	20.4	51.8	A	9.6	17.2	29.8		9.8	20.4	59.6	
9.5	58.8	40.0		7.7	23.9	25.9	A	9.8	21.2	20.4		9.2	17.2	4.1		9.7	36.2	38.5	
9.8	34 12.8	36.3		9.4	38.2	0.1		9.4	41.2	45.9	A	9.6	53.8	37.5		8.5	58.3	55.8	A
9.2	18.0	9.9		9.0	56.4	37.3	A	9.1	11 6.1	4.1		8.7	35 7.1	10.5	A	10	50 16.6	51.5	
9.8	30.4	13.6		9.7	49 19.1	59.0		8.2	17.0	14.4		9.7	42.5	20.1		9.7	27.0	59.8	
9.8	34.3	5.8		10	50 27.5	23.2		9.4	58.9	51.6	A	10	36 7.8	1.4		9.0	51 0.7	20.2	A
9.7	41.0	58.5		9.5	29.9	18.4	A	9.4	12 3.7	55.1		9.5	11.4	28.5		9.4	1.4	42.1	
9.6	45.6	58.5		8.0	34.5	35.5	B	9.2	4.9	48.1	A	9.5	27.9	22.7		9.6	10.4	57.5	
9.8	59.7	44.6		10	46.0	53.6		9.4	10.2	54.8		9.5	39.2	37.4		9.2	29.5	0.1	A
9.5	35 44.1	39.6		9.7	50.2	11.0		9.8	38.1	15.4		9.3	37 6.7	11.1		8.8	52 10.1	42.6	
9.8	36 11.5	58.4		9.8	53.0	27.7		9.0	45.2	36.4	A	9.1	11.1	0.0	A	9.3	17.7	18.4	
9.6	45.6	53.4		9.2	53.5	45.4		9.4	14 7.3	54.2		9.7	11.9	47.9		9.8	19.6	16.4	
9.0	54.2	10.4		7.5	52 5.9	30.4	A	9.7	20.1	24.9		9.4	27.9	40.0		10	36.4	55.7	
10	56.0	18.9		9.0	25.1	14.0		9.7	35.1	56.8		9.5	53.0	35.0		10	37.9	53.3	
10	56.2	31.0		9.5	43.9	35.9	A	9.0	48.1	22.7	A	9.5	38 3.8	56.8		9.3	53 34.4	52.9	
9.9	37 2.7	46.0		9.2	53 1.9	34.7	A	10	52.0	46.6		9.8	5.1	50.4		10	56.8	51.5	
9.4	6.6	1.3		9.7	4.2	40.5	A	9.7	15 26.5	46.9		9.6	22.0	1.4		9.8	54 14.8	11.5	
9.5	12.3	10.8		7.2	30.3	59.5	B	9.8	36.0	16.2		9.3	37.1	56.4		9.6	28.5	29.6	
8.8	16.6	7.0		9.4	54 6.8	54.5		9.3	16 2.9	53.1	A	9.0	39 2.0	56.2		9.6	29.4	0.8	
8.6	35.7	27.0		9.0	19.8	52.1		9.4	8.4	59.2	A	8.5	3.2	12.2	A	7.3	32.4	6.4	A
7.5	55.4	20.7	B	9.3	20.3	19.4	A	8.5	17 33.1	39.0	B	8.2	20.1	33.4	A	10	57.0	56.6	

3801—3860

	13h—14h	—19°	
m	m s	′	
9.8	55 8.7	54.7	
9.9	11.9	42.6	
9.8	31.3	14.5	
8.8	40.5	14.3	
9.4	56 18.8	19.3	
9.7	22.5	29.2	
9.6	25.0	58.1	
9.7	27.7	5.6	
9.0	57 8.8	50.5	
9.5	17.3	46.1	
9.3	48.5	25.8	
9.3	58 11.1	17.4	
8.3	29.0	22.4	A
9.6	36.4	59.7	
9.8	36.8	46.3	
9.3	38.6	58.6	
9.0	42.8	48.1	A
9.0	43.5	28.9	A
8.6	0 0.1	1.7	P
10	0.4	28.0	
9.3	16.2	55.1	
9.7	34.8	20.5	
10	41.7	40.6	
9.2	58.6	51.1	
9.5	1 1.8	38.6	
10	10.6	1.9	
9.1	12.4	13.0	A
9.9	56.6	10.3	
9.8	2 18.8	22.0	
9.4	3 28.3	12.0	
9.4	43.0	52.8	
9.7	4 16.0	46.0	
9.7	36.2	48.0	
9.3	5 45.2	11.0	
9.6	51.1	12.5	
8.0	58.1	31.6	A
9.3	6 32.6	48.3	A
9.3	58.4	17.0	
9.5	7 9.0	25.6	
9.1	35.4	16.2	A
9.5	8 6.0	30.1	
9.8	9 0.8	6.9	
9.4	11.6	17.4	
9.0	14.7	47.1	
9.4	14.9	37.3	
7.5	25.4	17.0	A
10	34.9	5.0	
9.8	47.1	58.0	
8.8	10 4.4	30.0	
10	9.0	13.5	
9.5	19.4	56.1	
9.6	20.3	48.6	
9.5	42.7	47.0	
9.6	48.7	20.9	
9.7	59.8	38.1	
9.8	11 44.2	43.4	
9.3	12 6.2	46.3	
9.7	32.6	10.5	
8.5	13 26.1	1.4	B
9.9	27.2	12.9	

3861—3920

	14h	—19°	
m	m s	′	
9.3	13 31.1	6.5	
9.8	37.6	7.4	
9.1	14 6.5	49.7	
9.2	22.1	49.0	A
9.8	54.6	59.9	
8.7	55.2	32.7	
9.5	15 21.2	25.1	
10	48.6	41.9	
8.5	53.1	29.6	A
7.7	55.5	8.0	A
9.8	58.8	42.8	
9.1	16 1.5	5.3	A
9.5	16.4	57.0	
8.5	22.5	1.0	A
9.9	47.3	16.9	
9.0	53.4	53.8	
9.8	57.6	31.0	
9.5	17 16.9	48.5	
7.3	22.6	18.0	A
7.0	24.6	18.7	A
9.1	33.0	33.9	
9.5	18 5.1	9.1	
9.4	17.6	55.2	
9.1	49.5	28.7	
9.7	52.2	20.4	
9.1	19 6.4	3.4	A
9.5	52.5	31.0	
8.0	20 11.1	54.9	B
9.7	16.1	29.5	
10	16.9	44.5	
9.5	21 7.8	42.0	
9.8	21.8	7.6	
9.2	27.3	5.0	
9.8	22 9.8	37.1	
8.7	10.2	41.8	
9.5	20.2	50.8	
9.5	25.1	56.4	
9.3	33.9	31.8	
8.0	23 5.0	19.8	A
9.5	19.4	33.1	
9.4	24 5.4	55.5	
9.5	25 16.1	48.1	
6.7	26 41.0	47.8	A
9.5	27 2.0	45.1	
9.3	23.9	59.2	
9.5	27.7	24.1	
9.1	43.0	8.2	
9.3	28 10.0	34.3	A
8.7	40.7	28.7	A
9.6	46.0	39.2	
9.4	51.5	4.4	
9.9	29 16.4	54.9	
9.5	26.9	2.0	
9.4	28.1	22.5	
9.5	34.6	27.6	
8.7	39.5	47.5	A
9.5	30 3.5	30.3	
9.2	14.9	1.8	
9.8	33.1	34.2	
8.2	37.3	18.2	A

3921—3980

	14h	—19°	
m	m s	′	
9.5	30 44.0	33.5	
9.3	31 0.6	29.2	A
8.3	8.4	43.3	A
10	13.4	53.7	
9.9	17.6	11.2	
8.9	17.8	14.0	A
9.2	22.4	33.1	A
10	23.5	49.7	
9.0	48.6	1.1	A
9.4	50.1	23.3	
9.4	52.1	22.2	A
9.5	55.4	33.1	
10	32 27.9	38.0	
9.1	29.3	6.2	A
10	34.8	19.1	
9.5	36.3	50.1	
9.5	42.1	56.1	
10	46.6	22.6	
7.3	33 16.0	17.8	A
10	22.4	37.5	
9.4	24.3	49.1	
8.9	32.9	34.8	A
9.4	34 37.4	36.1	
9.0	50.3	16.9	
9.9	53.3	9.3	
9.5	35 22.6	39.0	
9.4	24.2	10.4	
9.8	46.9	17.0	
9.3	48.3	50.2	
8.5	36 30.7	52.1	A
9.8	47.8	57.6	
10	37 6.3	5.3	
9.2	14.8	41.9	A
9.5	55.9	12.2	
10	57.2	51.2	
9.3	38 22.3	1.4	
9.2	31.6	3.7	A
9.2	42.2	12.4	A
9.7	54.8	21.7	
9.6	39 27.8	35.2	
9.4	40 6.0	54.0	A
9.4	37.1	44.6	
9.4	38.3	25.9	
9.2	44.3	6.9	
9.6	41 3.5	8.8	
7.3	16.1	17.7	B
9.3	25.1	16.2	
9.5	36.4	0.8	
9.0	39.8	56.0	A
9.5	42 1.7	16.3	
9.3	19.6	12.2	
9.1	43 16.2	30.2	
9.8	32.0	46.8	
9.7	46.0	49.9	
9.5	44 9.0	46.6	
9.7	25.8	16.7	
9.8	43.7	27.3	
7.5	45 26.9	22.4	A
7.3	46 52.2	25.2	A
9.7	57.3	0.3	

3981—4040

	14h—15h	—19°		
m	m s	′		
9.0	47 24.6	33.2	A	
8.0	56.9	48.1	A	
9.3	48 11.4	9.9		
8.7	22.9	57.4	A	
9.3	26.8	19.4	A	
9.1	32.2	3.5	A	
8.6	34.8	53.6	A	
9.0	49 19.0	32.6	A	
9.4	57.1	19.0		
9.1	50 17.4	53.8		
8.5	22.6	8.2	A	
9.5	35.1	59.7		
9.3	48.2	0.4	A	
9.0	55.8	21.1		
10	57.3	20.5		
9.4	51 4.8	18.9		
9.4	26.6	3.3		
9.1	31.1	20.1	A	
9.2	39.8	49.1		
8.7	47.1	34.1		
9.5	52 55.0	2.4		
9.6	53 30.7	49.4		
8.7	46.1	53.0		
8.9	53.7	42.3		
9.4	54 2.2	39.8		
9.5	13.6	47.3		
9.6	15.7	43.7		
9.8	28.5	15.5		
9.5	55 5.2	47.8		
10	56 2.0	4.8		
9.8	14.5	3.9		
9.6	26.8	28.3		
9.6	35.1	45.3		
9.7	39.6	5.1		
10	41.6	8.6		
8.8	57 3.9	2.4	A	
9.5	8.9	15.0		
9.2	21.2	33.0	A	
8.2	32.6	51.1	A	
9.5	47.5	46.9		
9.8	56.1	38.6		
9.8	58 14.6	46.1		
9.4	24.3	24.8	B	
8.6	30.9	38.5	B	
10	53.3	45.4		
9.1	54.0	15.4		
8.5	59 1.1	39.6	A	
9.8	29.6	33.8		
9.4	29.7	29.7	A	
9.1	0 3.2	17.4	A	
9.5	5.2	23.7		
9.5	38.6	38.9		
9.0	43.9	50.5		
9.5	56.8	12.9	A	
10	1 18.3	53.6		
7.3	31.8	57.8	B	
9.9	37.9	52.5		
9.4	49.7	19.4	A	
9.5	2 0.4	34.3		
9.2	5.5	38.1		

4041—4100

	15h	—19°	
m	m s	′	
var	2 28.3	27.8	
10	36.0	28.9	
10	36.7	37.6	
9.5	54.8	18.7	
9.8	3 0.5	17.9	
9.4	51.8	46.2	
4.5	57.9	14.4	A
9.0	4 2.2	15.2	
9.3	3.2	59.5	
9.5	18.1	29.4	
9.2	23.8	16.2	
9.0	39.5	34.5	
9.5	43.3	54.0	
8.5	5 0.1	42.4	A
6.5	3.3	5.9	A
10	27.3	4.9	
9.0	43.9	40.1	A
9.8	57.2	50.3	
10	7 5.0	28.1	
8.7	12.8	41.0	A
8.7	33.1	0.4	A
9.0	50.2	53.5	A
8.5	8 27.4	27.8	A
9.4	58.1	4.6	
9.8	9 12.2	13.4	
10	35.1	45.8	
9.2	36.1	51.4	
9.5	54.6	30.6	
9.5	10 12.3	14.9	
9.5	29.1	45.5	
9.2	42.0	7.9	
9.1	43.3	35.9	
9.0	45.1	18.5	
9.7	49.2	19.3	
9.0	11 8.3	25.6	A
7.3	34.6	1.1	A
10	34.9	17.1	
9.8	59.0	10.6	
9.8	12 7.2	18.9	
9.7	8.1	59.6	
10	21.0	7.4	
9.3	46.1	55.7	
9.5	51.5	58.3	
var	13 4.0	51.6	
9.8	5.3	22.0	
9.8	37.1	43.0	
9.7	49.8	15.8	
9.2	57.2	32.4	
9.5	14 23.0	56.5	
9.5	25.6	29.5	
8.3	53.2	16.0	
9.8	15 0.5	41.1	
9.2	2.7	12.5	
9.3	17.0	56.5	
8.9	23.2	13.8	
9.4	32.8	19.3	
9.4	16 0.5	12.9	A
9.5	4.9	46.2	
8.2	10.7	26.6	A
9.5	57.8	16.9	

4101—4160				4161—4220				4221—4280				4281—4340				4341—4400			
	15h	−19°			15h	−19°			15h	−19°			15h—16h	−19°			16h	−19°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.3	17 48.0	59.6		9.4	29 26.6	30.5		8.5	39 58.1	56.7	B	9.9	51 53.8	44.5		9.1	5 47.7	17.2	
10	49.6	23.5		9.8	39.5	15.6		9.5	40 2.2	19.8	A	9.3	52 8.5	27.9		8.8	6 11.9	52.0	A
10	55.9	28.7		9.9	41.2	32.2		9.5	12.7	26.4		9.7	11.6	53.1		9.4	32.6	14.5	
8.7	18 14.4	59.0	A	8.5	56.3	52.2	A	9.2	16.5	42.3	B	9.7	12.6	31.1		9.4	32.9	40.6	
9.7	26.5	10.5		7.0	30 5.9	25.6	A	9.6	19.9	45.9		9.7	31.8	28.3		9.2	33.6	46.0	
6.5	31.1	29.6	A	9.0	9.1	17.8	A	8.7	38.7	22.1	A	9.1	54.8	27.4		9.1	59.3	52.0	A
10	33.3	16.1		8.3	19.8	41.4		8.0	58.4	50.1	A	9.5	53 12.3	45.4		9.4	7 9.3	42.9	
9.0	19 26.3	7.6	A	9.8	21.4	38.9		10	41 1.6	4.2		9.5	32.3	43.3		7.5	21.4	42.2	A
9.5	29.8	40.5		7.9	39.2	14.8	A	9.8	5.2	10.2		8.8	39.9	22.3		10	8 22.6	33.6	
9.8	35.1	19.1		9.5	45.1	52.0		9.3	9.5	58.1		9.5	47.2	6.7		6.5	29.9	44.1	A
9.2	38.0	23.3	A	9.4	49.4	14.3		9.7	17.2	27.1		8.2	50.7	2.4	A	9.5	9 51.6	43.9	
9.3	20 22.5	22.9		9.8	50.5	20.0		9.3	43.6	29.4	A	9.5	54 13.8	3.9		9.5	51.7	5.4	
9.5	24.9	38.7		9.8	31 3.4	43.6		9.5	43.7	2.2		9.8	16.4	21.1		9.0	10 9.4	25.5	
8.6	34.8	42.1	A	9.1	10.3	43.4		9.3	42 6.5	28.1		8.9	36.3	35.4	A	9.5	19.9	37.4	
9.7	35.7	50.9		8.9	20.1	39.5		9.8	11.0	17.3		7.5	41.3	26.1	A	9.2	22.0	19.5	
10	36.0	56.8		8.6	28.6	14.2	A	9.4	12.4	37.2		8.0	55 18.6	10.2	B	9.4	22.7	7.6	
9.5	52.7	3.3		7.6	34.1	17.7	A	9.8	21.5	39.2		9.0	23.2	6.6		6.0	38.3	51.5	A
9.5	21 32.8	33.2		9.5	38.0	4.4		10	39.7	18.7		8.0	35.3	21.4	A	8.5	11 35.6	41.2	A
9.2	40.0	25.5	A	9.6	58.4	28.6		8.9	41.5	33.6	A	9.3	35.7	14.0		7.7	36.3	41.9	A
9.2	41.3	28.1	A	9.8	32 6.3	29.3		9.8	43 3.6	18.9		9.5	58.7	0.1		9.5	43.0	9.9	
10	22 12.9	25.6		9.8	12.6	28.6		9.4	7.5	14.0		10	56 2.2	57.1		7.3	12 0.8	45.7	A
10	15.2	13.0		9.2	27.9	24.4	A	9.8	32.5	35.1		9.0	24.3	14.9	A	8.6	40.9	35.0	A
9.8	24.2	14.4		9.3	38.3	56.7		9.9	52.3	52.4		8.5	25.1	54.5	WZ	9.6	13 30.2	54.5	
9.9	34.8	41.9		9.7	41.6	58.3		9.5	57.1	30.7		9.0	25.3	42.4		9.5	34.2	1.0	
9.5	41.7	46.4		9.3	52.8	14.4		9.7	44 3.8	17.2		9.0	29.7	1.7		5.0	15 37.3	41.6	A
9.5	57.2	43.5		9.3	33 5.7	46.3		9.6	10.6	1.9		9.5	38.2	40.7		9.0	16 32.7	9.1	
9.1	23 10.9	33.0		9.3	24.1	12.1		9.8	16.0	29.8		2	59.9	24.3	A	9.1	53.6	59.1	
6.7	22.7	40.0	A	5.3	36.1	12.3	A	9.1	23.1	51.9	A	8.0	57 2.6	23.9	L	8.5	58.3	30.1	A
9.0	28.5	11.5		9.9	54.9	30.4		5.4	55.2	43.7	A	8.0	19.5	16.8	A	9.5	17 53.6	18.6	
9.0	46.4	23.8		8.7	34 0.4	1.0	A	9.6	57.5	59.1		9.8	32.6	15.1		9.8	54.1	52.2	
10	57.2	15.9		9.0	2.9	23.9	A	10	45 14.6	38.7		8.9	50.2	23.4	A	9.4	56.4	12.1	
9.3	24 4.7	41.6	A	9.5	7.3	5.5		9.8	20.2	59.2		9.6	59.6	15.1		9.8	18 33.3	25.1	
9.8	6.7	43.7		10	14.8	30.5		8.7	26.9	53.0	A	9.4	58 7.4	50.0	A	9.7	19 24.1	6.1	
8.7	14.9	30.5	A	9.0	28.6	46.6	WZ	10	42.5	42.1		9.8	16.3	22.7		9.8	22 47.1	41.4	
5.5	17.3	10.5	A	10	36.8	24.7		10	48.4	56.8		9.4	38.5	3.1		8.8	24 3.0	45.8	
10	31.1	8.1		9.7	42.8	13.1		9.8	50.2	28.7		8.6	59 22.6	35.7	A	8.8	10.3	16.4	WZ
9.8	40.4	28.5		9.5	44.9	2.2	A	10	50.5	3.4		9.4	0 1.9	16.6		9.2	25.2	26.0	
9.1	49.5	24.1	A	9.3	48.5	52.8		9.7	46 1.0	3.0		9.5	7.7	58.7		9.6	39.8	23.2	
9.8	50.2	15.2		9.8	57.7	50.4		9.7	6.2	56.1		9.8	22.3	57.0		9.1	51.7	56.0	
9.0	25 5.2	45.4		9.6	35 27.3	51.5		8.9	35.9	49.0	A	9.6	40.5	56.1		9.4	26 10.7	21.5	
9.0	10.0	34.0	B	9.6	34.0	51.2		10	36.0	38.4		9.8	44.9	58.9		8.4	17.0	38.1	A
10	19.3	32.8		8.8	51.6	19.8	A	9.5	51.9	12.3		8.2	55.9	4.2	A	9.0	27.5	49.5	B
9.3	33.1	8.4		8.8	59.4	14.9	A	9.7	55.9	45.4		9.6	57.6	18.9		9.5	30.0	14.8	
9.7	38.9	24.8		9.5	36 20.0	44.4		9.4	47 12.2	11.2	A	9.5	1 50.1	32.5		9.1	30.7	21.6	
9.1	40.6	5.2	A	9.3	24.2	35.5	A	10	32.1	35.5		9.4	51.4	8.0		9.1	38.7	52.7	
9.6	52.1	50.8		9.5	24.2	11.4		9.7	35.9	4.4		8.9	2 15.9	0.7	A	9.7	27 4.4	1.6	
9.6	26 19.5	9.3		9.4	25.1	40.0		9.8	40.0	34.7		8.7	26.0	37.7	A	8.7	5.4	57.0	A
9.3	43.0	32.8	A	9.7	37 21.0	15.3		9.8	49 4.9	1.1		10	44.0	41.8		9.3	19.5	45.1	
10	44.9	53.8		9.8	24.5	54.2		9.3	12.4	32.0		9.7	3 10.3	44.5		9.6	42.4	57.9	
9.8	51.0	33.9		9.5	31.5	22.5		9.8	20.9	41.0		var	18.2	45.3		8.8	28 2.9	51.1	
9.2	57.5	3.3	A	9.5	43.0	5.6	A	9.9	38.0	26.5		9.8	28.9	48.1		9.2	8.2	59.2	
9.4	27 13.6	8.6	A	9.3	44.2	56.5		9.8	53.9	59.8		7.3	32.6	3.7	A	8.7	9.7	17.9	WZ
9.0	46.4	57.3		8.9	38 13.0	10.1	A	8.3	50 21.8	7.3		4.5	33.9	4.4	A	9.5	31.4	3.8	
9.8	51.6	15.6		9.4	24.6	42.5		8.7	41.9	30.9	B	8.4	55.9	12.0	A	9.5	32.9	28.7	
10	52.4	1.1		9.4	39 0.1	29.1		8.6	43.5	31.1	B	9.4	4 1.3	7.5		9.5	35.5	15.8	
9.4	56.8	53.5		9.8	11.9	49.5		9.0	51 34.1	59.8		9.8	13.3	59.5		9.6	41.5	18.5	
9.3	28 15.6	19.9	A	10	27.0	2.3		9.3	36.2	41.8		7.5	17.8	7.2	A	9.5	29 0.9	31.4	
9.4	28.3	51.8	A	8.8	27.9	15.1	A	9.7	37.0	13.2		9.6	50.4	59.7		9.8	7.8	57.9	
9.8	39.4	41.2		9.2	32.2	24.2	A	9.5	37.3	4.7		9.5	5 27.8	57.6		9.4	22.9	52.8	
9.7	29 14.6	11.8		9.8	56.6	34.2		9.8	52.2	33.8		9.5	45.6	13.1		9.2	59.7	14.1	

4188: rothgelb

4401—4460

m	16h m	s	—19° ′	
9.3	30	7.8	26.6	
9.3		27.3	59.0	
8.8	31	59.0	34.3	B
8.9	32	4.2	10.3	
9.3	33	19.3	9.2	
6.0		22.4	38.5	B
8.5		45.0	46.8	A
8.5		45.5	54.2	A
8.3		52.7	52.8	A
9.3	34	18.8	38.5	
9.0	35	1.9	57.0	
9.5		24.8	42.6	
9.6		45.0	25.4	
9.6		48.4	47.8	
8.3		53.8	34.4	A
9.3	36	28.8	35.0	
9.2		58.2	10.7	
9.8	37	27.8	1.2	
9.4		29.2	29.4	
9.4	38	5.1	37.6	
9.5		9.3	43.7	
9.8		16.7	31.6	
9.1		17.4	44.9	
10		17.8	39.3	
7.6		24.5	49.7	A
9.3	39	8.2	52.6	
8.5		15.9	36.5	B
9.7		16.4	31.6	
9.0		36.7	6.6	
9.5		45.0	18.6	
8.0	40	4.2	1.2	A
8.5		14.6	48.0	A
9.5		24.7	39.3	
8.7		30.5	20.5	B
8.8		32.7	12.0	WZ
8.3		46.3	0.1	B
9.3	41	3.7	56.3	
9.5		14.2	36.9	
9.4		14.8	11.4	
9.4		55.4	58.5	
9.5	42	3.5	55.1	
9.5		8.3	23.2	
8.3		24.5	34.8	A
9.4		31.9	14.3	
9.2		41.8	31.5	
9.8	43	1.4	20.9	
9.5		28.5	59.0	
9.4		31.7	10.9	
9.8		41.5	19.5	
9.8		42.7	19.1	
7.8		51.8	5.9	A
9.4	44	3.2	6.4	
9.0		3.9	27.4	
10		18.8	44.9	
8.6		24.4	56.4	A
9.4		24.9	24.4	
9.5		45.6	14.6	
9.4		48.7	15.8	
9.0	45	13.3	10.3	
8.3		25.7	3.6	A

4461—4520

m	16h m	s	—19° ′	
9.0	45	47.7	7.2	A
9.7		55.8	2.7	
9.7	46	31.1	41.0	
8.7		48.5	12.2	A
8.7		53.2	16.7	A
8.7	47	7.2	51.5	WZ
9.5		12.6	6.9	
9.5		14.3	29.0	
9.6		52.1	16.2	
9.3	48	10.8	46.3	
6.9		33.2	18.2	A
9.1		42.6	20.8	
9.1		55.9	39.5	A
8.3	49	22.2	33.5	B
9.6		43.7	1.4	
9.4		45.5	27.0	
9.5		56.7	13.3	
9.7		58.9	15.9	
9.8	50	2.8	46.8	
8.8		7.1	10.4	
9.1		12.8	54.3	WZ
9.3		22.5	22.9	
9.9		39.6	7.5	
9.1		46.0	11.8	WZ
9.5		46.0	15.6	
9.4		51.7	45.6	A
9.8		53.2	53.7	
9.8		54.1	59.0	
9.5	51	29.1	27.6	
9.5		39.0	40.5	
9.4		45.0	13.4	
9.4	52	43.8	57.6	
9.4		57.8	34.6	
9.4	53	12.9	21.4	
9.8		38.0	1.7	
9.5	54	11.1	10.3	
9.8		41.3	34.3	
8.2		45.0	55.9	B
8.0		48.2	16.4	A
8.4		54.4	52.5	B
9.7	55	0.0	14.2	
8.9		4.2	14.7	B
9.7		20.5	16.6	
9.2		26.1	52.7	
9.5		27.9	1.3	
9.7		29.2	18.4	
9.3		36.1	1.5	
9.7		48.5	15.1	
9.3		51.8	31.5	
10		55.3	15.3	
9.4	56	1.7	28.0	
9.4		27.1	15.4	
9.7		29.7	9.2	
9.7		40.3	48.7	
8.5		42.0	59.3	B
9.5		43.1	34.0	
9.2	57	4.4	9.9	
9.5		15.0	13.8	
9.0		30.7	35.5	WZ
9.2	58	0.8	30.8	

4521—4580

m	16h—17h m	s	—19° ′	
9.2	58	22.8	18.0	
8.5		23.0	44.5	A
9.7		23.6	16.5	
8.8		35.8	18.0	WZ
9.2		52.8	2.3	
9.2		55.0	3.8	
8.0		56.0	5.6	B
8.3	59	13.1	0.1	B
9.5		33.7	54.5	
9.8		34.1	9.5	
9.4		42.7	34.5	
9.5		43.8	47.2	
9.0		45.0	35.8	A
9.5		47.0	30.0	
9.8		51.4	22.6	
9.2		54.0	12.5	
9.7	0	2.8	10.3	
9.1		21.3	29.0	A
9.7		36.3	2.9	
8.7		36.5	29.1	A
9.8		53.6	50.3	
9.8	1	0.0	2.5	
9.4		3.3	23.4	
9.2		5.1	40.2	
9.4		14.8	27.6	
9.2		40.7	40.0	
7.0		43.1	14.8	B
8.9		50.6	51.4	
8.8		52.7	19.4	A
9.4	2	17.3	23.9	
9.8		18.4	22.8	
9.2		19.6	57.9	
9.5		21.1	46.9	
9.5		36.3	26.0	
9.4		36.5	20.7	
9.7	3	10.4	3.2	
9.8		11.3	27.9	
9.1		55.2	36.3	A
9.8		57.1	51.8	
9.0	4	54.1	44.8	
9.4	5	6.6	13.0	
9.3		8.5	22.0	B
9.5		23.0	53.7	
9.8		26.7	32.1	
8.8		37.4	5.1	WZ
9.4		54.8	9.8	
9.8	6	5.8	18.5	
9.3		7.4	7.8	
8.5		19.3	41.4	WZ
9.0		28.8	22.3	
9.3		29.6	40.8	
9.5		38.9	45.0	
9.5		45.9	13.1	
9.4		52.0	3.2	
9.8	7	2.8	52.4	
9.8		39.0	34.6	
9.0		49.3	14.2	
7.9		56.5	10.1	A
9.2	9	3.1	45.1	
9.2		7.0	56.3	

4581—4640

m	17h m	s	—19° ′	
9.8	9	16.9	14.4	
9.7		18.8	5.6	
9.5		19.2	29.9	
9.2		29.0	47.8	
9.5		46.6	41.6	
9.8		48.6	35.0	
9.4		55.1	38.6	
9.5		55.3	4.0	
9.4		58.0	49.4	
9.5	10	8.4	10.0	
8.8		18.6	5.3	WZ
9.3		19.1	55.6	
9.5		21.7	45.6	
9.6		46.1	33.9	
9.0		46.6	23.9	
9.1		58.2	19.0	
10	11	6.1	13.0	
9.6		6.8	18.5	
9.1		18.1	31.3	
8.0		22.7	33.1	B
9.3		26.0	39.0	
7.9		26.0	49.3	A
9.4		50.3	42.7	
9.5		58.7	59.1	
6.5	12	3.8	10.4	A
9.5		15.4	53.1	
9.6		38.2	27.1	
9.5	13	3.0	31.8	
9.6		7.0	19.7	
9.6		9.9	20.3	
9.0		31.9	55.7	
9.2		36.6	22.5	
9.5		43.5	25.0	
9.5		59.7	55.1	
7.9	14	1.1	28.0	B
9.7		20.7	57.6	
7.8		44.2	18.1	A
9.5	15	50.0	3.8	
9.8	16	5.6	49.1	
9.5		25.0	23.0	
9.2		27.8	56.9	
8.5		36.1	58.3	A
9.4		48.7	51.3	
8.0		56.2	36.1	A
9.6	17	14.0	42.9	
9.1		16.9	6.7	
8.6		17.3	9.6	A
9.4		18.2	51.0	
9.2		21.4	51.8	
9.7		32.8	34.8	
9.7		52.1	43.3	
8.7		52.4	22.7	A
9.3	18	5.3	14.7	
9.5		9.3	6.3	
9.1		12.9	51.6	A
9.5		34.7	24.7	
9.8	19	10.6	8.5	
8.5		11.4	5.9	A
9.3		19.8	9.4	
9.2		34.0	50.6	

4641—4700

m	17h m	s	—19° ′	
9.8	19	55.0	16.0	
9.7	20	9.3	49.8	
9.8		30.9	43.7	
7.8	21	10.9	21.1	A
8.0	22	5.7	26.2	A
9.5		6.0	32.4	
9.2		33.8	42.9	
9.8		38.8	0.0	
9.5	23	25.5	24.8	
9.5		57.8	13.1	
9.7	24	40.9	33.8	
8.6		42.1	15.1	
9.5		49.5	21.9	
9.3		51.4	53.0	
9.0	25	3.7	2.3	
8.9		10.0	48.5	B
9.5		19.2	23.9	
9.6		34.5	27.8	
8.0		36.9	4.0	M
9.0		54.9	7.3	
9.8	26	55.5	16.5	
8.0		56.5	47.5	A
9.2	27	46.7	26.0	
9.5		47.3	14.9	
8.1	28	1.7	58.3	WZ
9.4		5.7	49.3	
9.5		8.9	55.4	
9.5		13.3	21.3	
9.4		24.0	44.0	
9.5		25.9	25.2	
9.5		26.8	14.8	
9.1		56.2	57.9	A
9.2	29	28.2	18.0	
8.9		33.9	52.7	A
9.7	30	0.2	21.1	
9.6		5.7	45.4	
8.3		17.7	26.9	A
10		38.6	10.2	
9.5		54.9	3.8	
8.3	32	22.1	53.7	WZ
9.5		24.5	58.6	
9.0		34.9	27.3	
8.0		44.9	22.5	A
9.8	33	5.3	18.0	
9.4		9.3	57.2	
8.9		14.8	10.6	
9.2		27.7	14.1	
8.5		50.2	19.4	A
9.6		56.2	5.4	
9.1	34	7.1	49.8	M
9.6		26.0	30.6	
9.8		35.3	36.0	
8.6		36.6	25.9	A
10		42.9	37.7	
9.0	35	10.5	33.5	
9.4		47.0	49.1	
9.5		57.4	45.4	
9.5	36	30.6	53.7	
9.6		30.8	13.7	
9.4	37	35.3	46.7	

4607: neb GC 4293 4644: roth

4701—4760					4761—4820					4821—4880					4881—4940					4941—5000				
	17h		−19°			17h		−19°			17h−18h		−19°			18h		−19°			18h		−19°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.4	37	58.3	35.3		9.7	48	11.0	1.4		8.0	55	29.1	48.4	B	9.5	1	52.6	50.5		9.3	8	18.5	22.9	
9.0	38	6.8	56.1		9.3		12.3	2.1		9.3		33.7	25.5		8.8	2	4.5	11.6		9.4		24.8	20.7	
9.5	39	10.5	4.7		9.4		18.4	3.5		10		35.0	23.5		9.1		6.3	19.3	A	9.3		25.6	35.9	
9.5		25.2	0.6		8.4		20.2	18.4	A	9.5		36.6	42.5		9.2		26.5	35.5		8.0		27.5	0.8	A
8.8		42.4	6.1		9.7		20.9	4.8		9.1	56	4.2	36.3		9.5		37.1	56.8		8.9		28.2	7.2	A
9.5		43.1	21.2		9.7		25.3	0.8		9.5		6.7	3.5		6.7		39.3	51.9	B	9.4		30.6	55.1	
9.0		50.3	34.7		9.8		29.6	1.9		9.7		12.5	34.7		9.5		41.8	42.6		9.8		37.4	3.8	
8.3	40	6.7	43.2	A	10		30.9	4.2		8.5		14.3	1.9	A	8.7		46.1	27.8	WZ	9.3		41.9	47.1	
9.5		38.0	57.2		9.3		36.0	1.4		9.0		36.0	22.3		9.4		50.5	14.1		9.3		45.4	18.8	
9.8		49.7	0.3		9.3		36.0	4.0		8.8		38.8	35.1	A	9.4		56.8	20.9		9.5		49.3	8.2	
7.4		59.3	57.2	B	9.8		50.3	1.4		9.5		47.8	58.8		9.8		59.5	31.9		9.5		49.7	14.2	
10		59.5	57.6		8.3		51.2	55.9	WZ	6.9		58.1	45.3	A	9.0	3	12.9	4.1		7.8		52.1	31.8	WZ
8.5	41	16.1	51.3	A	10		54.6	3.2		9.1	57	3.2	58.4		9.4		15.4	45.3		7.6	9	5.6	42.8	P
9.4		48.5	17.6		8.6		59.1	51.7	WZ	8.0		20.3	27.9	A	9.0		23.0	5.2		9.6		17.1	44.7	
9.5		51.4	10.6		9.0	49	5.9	7.0		8.3		20.3	42.7	A	7.3		40.3	27.7	A	8.9		28.1	10.2	
10		57.3	53.4		8.8		10.1	25.9	WZ	8.8		22.3	57.5	A	9.5		49.4	18.2		9.1		54.0	10.0	
9.8	42	1.9	57.3		8.8		38.4	15.0		9.0		33.3	57.3		9.3	4	3.6	18.3		9.5	10	5.5	9.7	
9.5		2.8	28.8		8.8		46.2	12.8		9.0		45.4	34.0	A	9.3		7.3	26.3	A	9.0		27.5	30.5	A
9.5		53.2	37.3		9.9		54.2	37.0		9.8		55.7	53.2		9.5		15.9	28.8		9.3		35.8	41.9	
9.3	43	1.8	59.5		10	50	8.5	5.6		9.2		58.2	14.1		8.7		21.3	46.9	A	9.8		45.1	13.4	
10		2.1	12.7		9.3		8.8	58.8		8.8		58.8	4.6	A	9.5		28.0	16.0	A	9.5		51.8	42.8	
10		5.6	11.0		9.5		11.2	1.0		9.0	58	22.8	23.2	A	9.8		35.9	42.4		8.5		59.3	47.4	WZ
8.0		8.3	43.9	B	9.2		27.4	33.5		9.5		31.6	40.4		9.6		49.3	24.1		9.0	11	30.2	34.2	A
10		12.5	2.2		8.5		42.1	31.3		9.5		36.4	58.1		9.4		51.8	47.2		10		36.6	54.1	
6.8		14.6	28.5	B	9.5		52.1	40.9		9.4		38.1	50.5		9.2	5	1.4	19.6	A	8.4		53.6	53.9	A
9.3		35.0	40.2		9.4	51	12.5	49.9		9.1		39.5	17.8		9.4		7.9	51.2		9.7		57.7	35.5	
9.0		39.3	44.3	WZ	9.8		28.8	1.7		9.8		51.9	5.6		9.5		9.8	17.1		9.5	12	4.5	16.3	
6.7		46.9	4.5	A	9.3		42.1	43.6		9.8		53.2	15.3		9.6		11.9	13.3		10		11.5	37.2	
8.7	44	4.3	20.5		7.8		51.9	13.1	B	9.3		58.7	18.5		9.1		19.5	1.5	M	9.0		15.8	59.3	A
9.8		13.5	27.1		9.1		52.8	22.6		9.6	59	6.6	48.8		9.3		23.7	8.9		7.8		26.8	42.8	A
9.5		13.7	33.5		9.1	52	1.6	42.9		9.7		6.9	13.6		9.9		29.2	2.5		9.5		33.1	59.2	
9.1		41.1	0.9		8.5		6.4	41.6	WZ	9.7		20.7	22.3		9.5		30.7	11.9		9.8		33.5	1.7	
7.0	45	11.1	50.9	A	9.3		12.3	55.9		9.5		22.9	20.5		9.3		34.1	14.0	A	9.4		50.0	41.0	
8.8		46.8	25.4		9.0		14.5	53.7	A	9.6		23.9	24.8		9.5		43.3	24.6		8.3		51.6	19.6	B
9.5		59.3	29.6		8.3		28.7	51.2	A	9.5		31.7	9.4		9.2		44.6	6.5		9.5	13	7.3	36.0	
9.5	46	0.2	7.1		7.8		31.6	56.8	A	9.5		49.8	41.2		9.5		56.8	21.9		9.3		8.8	44.3	
9.5		0.3	9.2		9.0		36.4	40.9		9.0		50.2	57.4		8.8	6	2.4	5.5	A	9.5		21.1	43.2	
9.5		3.0	22.4		9.1		38.5	50.3		8.4		51.4	52.4	WZ	9.4		2.6	26.8		9.6		46.7	34.1	
9.8		13.2	7.4		9.3	53	6.3	21.7		9.5		59.3	3.9		10		8.4	45.4		9.8		49.2	18.2	
9.3		13.3	59.0		7.0		20.3	5.5	B	9.7	0	6.6	23.5		9.5		8.5	24.1		9.0	14	14.7	14.2	
9.3		21.6	51.5		9.0		20.6	40.6		9.5		25.2	37.3		9.3		20.4	15.7		8.9		19.3	50.0	A
9.4		25.1	35.9		9.5		23.1	36.5		9.5		28.6	13.9		9.5		26.2	58.1		9.3		38.8	46.4	A
9.5		37.6	42.2		9.4		35.1	48.1		8.2		29.5	53.4	B	9.5		27.2	58.3		9.5		40.2	7.1	
9.4		41.6	18.7		9.1		45.6	36.5		8.6		33.1	52.0	WZ	9.0		28.2	15.1		9.3	15	5.2	21.4	
8.9		47.1	15.6	WZ	9.7		54.5	9.7		9.0		34.6	54.0		9.8		39.8	53.9		9.4		16.3	34.5	
9.2		50.4	17.5		9.7		57.1	15.5		9.0		42.4	44.7		9.3		40.4	9.4		9.5		24.9	56.9	
9.4	47	5.3	3.4		9.5	54	13.1	43.7		9.1		48.5	12.1		10		43.5	50.9		7.8		29.8	27.8	WZ
9.0		6.4	47.7	A	9.8		28.8	2.3		9.5		53.2	13.9		8.2		45.3	1.4	A	8.2		34.8	38.9	A
9.5		11.3	24.4		9.9		43.3	4.7		9.3		58.1	8.0		8.5		45.8	58.0	WZ	9.8		40.2	15.7	
9.3		31.2	20.9		10		49.7	15.4		9.6		59.3	4.1		9.5		48.6	54.2		8.6		41.7	52.7	A
9.2		37.5	48.0		10		53.7	13.8		8.4	1	3.5	22.7	A	9.3		56.5	21.0		9.8		43.0	19.0	
9.3		37.7	32.8		10		54.0	51.1		9.8		4.4	13.0		9.1	7	1.7	59.7		8.0	16	3.3	47.8	B
9.0		40.4	1.6		10		59.2	56.2		9.2		9.2	10.2		9.0		4.2	31.2		9.3		5.3	47.3	
9.6		42.9	0.2		9.5	55	7.6	32.5		9.5		10.4	20.2		9.6		5.0	13.9		9.3		7.3	44.7	
9.3		50.3	7.4		9.3		16.6	26.1		9.4		12.6	38.6		9.2		7.9	52.4	WZ	9.3		8.6	46.9	
10		53.8	0.6		9.0		17.6	13.2		9.4		18.1	5.6		9.2		21.1	57.2		9.5		9.8	33.1	
9.8		56.3	44.7		9.4		22.2	34.9		9.8		23.7	0.9		9.5		37.5	23.3		9.2		19.3	20.0	
9.5	48	1.9	3.6		9.1		24.7	42.9		9.6		33.8	12.5		9.7		43.8	15.6		9.0		44.2	7.7	
9.6		4.5	4.2		8.0		26.6	27.9	A	10		42.4	17.4		9.1		53.0	1.2	WC	9.4	17	26.4	6.3	
9.4		8.4	7.4		9.0		28.5	36.9		9.6		46.3	12.7		9.4	8	16.4	49.7		10		30.4	3.3	

4709: neb GC 4333

5001—5060				5061—5120				5121—5180				5181—5240				5241—5300			
	18h	—19°			18h	—19°			18h	—19°			18h	—19°			18h	—19°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.7	17 55.9	16.6		9.5	24 22.2	25.7		9.3	32 28.3	54.0		8.5	41 2.4	3.6	A	9.5	48 58.6	48.3	
9.3	59.2	9.2		9.5	39.1	4.4		9.0	31.0	40.5	WZ	7.1	3.1	18.1	B	7.0	49 4.1	20.4	M
9.5	18 13.6	7.5		9.3	50.0	36.5		8.9	38.5	45.4		9.5	11.5	4.9		9.5	11.2	6.0	
9.4	20.0	36.8		9.6	57.0	17.9		8.6	40.0	35.8	M	9.2	21.7	53.8	A	8.4	15.5	53.0	A
9.7	39.7	47.6		8.5	25 2.0	56.5	M	9.4	50.4	18.4		9.4	29.0	35.7	A	9.6	32.5	35.6	
9.5	39.7	9.4		9.9	4.5	17.3		9.1	33 8.8	2.8	A	8.8	45.9	8.1	A	9.5	44.0	7.4	
8.5	40.0	1.7	A	9.0	24.5	35.0		9.6	11.9	16.9		9.5	49.8	37.0		9.4	44.5	3.5	
9.5	51.7	5.6		9.4	27.0	45.1		9.5	15.0	32.6		9.5	51.1	2.9		9.5	55.6	50.9	
9.3	19 2.9	14.6		9.5	29.5	53.0		9.4	18.7	24.8		8.7	55.9	27.6	A	9.4	57.8	46.8	A
9.6	13.2	14.0		10	36.9	7.4		9.4	19.0	28.9	M	9.5	42 5.3	31.7		8.8	58.0	21.8	A
8.8	25.5	9.4		7.5	48.6	53.1	B	8.7	26.4	14.4	A	9.5	6.8	44.1		9.6	50 12.0	1.0	
8.8	36.9	32.4	A	9.3	56.0	46.1		9.1	48.0	48.2	M	9.5	8.1	48.7	A	9.3	14.5	34.5	
8.8	42.4	35.2	A	9.1	26 14.4	23.4		9.5	34 11.5	37.1		9.1	11.0	22.7	B	10	37.0	21.0	
9.3	59.0	40.6		9.5	20.5	32.3		6.5	22.0	25.3	A	9.5	23.4	3.2		9.4	41.9	13.8	
8.8	59.8	51.8	A	8.8	25.0	38.4	A	9.5	24.5	45.4		8.4	34.1	46.6	A	7.0	52.2	28.1	A
9.5	20 6.8	14.6		9.5	39.2	59.5		9.4	30.4	53.6		9.8	48.3	50.0		9.2	51 1.7	51.5	B
9.3	15.5	15.4		7.0	49.5	22.3	B	8.8	45.4	21.7	A	9.8	54.4	9.2		9.4	7.8	53.2	
9.0	19.8	20.2		9.0	56.3	30.1	A	9.5	35 0.5	52.0		8.4	55.8	48.2	A	8.8	28.7	29.8	A
9.0	27.7	3.0	A	10	27 3.7	51.5		9.4	13.8	46.3		9.5	43 33.9	30.5		9.3	30.0	27.0	
9.0	32.2	8.8	A	8.5	16.3	39.6	A	9.0	29.9	22.6		9.5	44 20.0	38.9		9.8	34.5	6.0	
9.4	52.0	50.0		9.3	23.0	33.5		10	31.9	55.6		8.7	23.4	50.3	A	9.5	52 0.2	25.6	
9.5	57.9	4.8		9.5	37.8	1.2		7.0	36.4	27.6	A	8.3	25.5	17.4	P	7.3	2.7	50.8	B
9.5	59.4	20.7		8.8	39.2	57.2	WZ	9.4	44.3	2.1		9.5	29.8	58.8		7.8	32.8	32.3	A
9.9	21 4.0	50.2		9.5	40.9	7.8		9.5	47.4	16.8		8.8	44.6	57.5	A	9.4	47.3	52.4	
8.8	8.3	41.4	A	9.4	41.8	23.7	B	9.5	48.4	1.5		9.5	49.9	42.4		9.5	51.5	14.7	
9.3	10.8	15.1		10	47.4	51.3		9.2	51.5	15.8		9.2	54.3	55.2	A	9.6	53 11.7	15.4	
9.5	20.1	56.4		9.0	56.6	44.7	WZ	9.5	54.5	36.4		9.8	45 3.6	18.3		9.3	12.8	30.6	
8.8	20.5	36.4	A	9.5	28 3.4	17.4		9.4	36 3.4	32.2		9.2	4.0	51.1		9.1	44.8	11.4	
9.5	35.6	56.4		9.5	11.1	4.0		8.9	9.0	28.0	A	8.8	5.2	37.5	A	9.1	54 1.9	23.8	
8.8	48.9	27.5	A	9.6	11.7	56.4		9.5	48.9	2.0		9.5	13.5	42.4		9.5	4.3	42.0	
9.4	22 3.4	10.9		9.4	18.5	25.0		9.5	37 11.9	10.8		7.8	14.9	57.8	A	9.4	16.5	37.3	
9.4	9.7	7.9		9.5	24.0	1.8		9.4	19.3	57.1		9.3	17.8	53.8		9.4	17.6	13.9	
9.5	11.5	29.0		9.2	25.9	23.0	B	8.7	24.1	13.6	A	9.1	25.5	14.6		6.1	32.3	27.0	B
10	34.8	11.9		8.2	26.6	15.1	B	6.8	28.0	45.0	A	9.4	32.2	43.1		9.1	32.9	40.0	W
9.4	38.0	40.0		8.6	30.9	53.6	WZ	9.5	43.1	43.7		9.5	32.4	26.6		7.0	35.9	18.2	B
8.4	51.2	15.4	A	9.4	31.6	14.9		9.5	47.6	8.8		9.4	38.9	29.7		9.2	36.0	7.2	
9.1	54.5	14.6	A	7.6	34.4	19.8	A	9.5	58.6	48.4		9.5	46.9	35.1		9.0	42.8	37.1	
9.4	55.2	20.1		10	37.3	24.7		9.5	38 0.3	3.3		9.4	50.0	47.2		9.0	52.3	43.4	W
9.5	56.2	24.0		8.3	41.1	31.4	A	9.7	8.4	30.1		9.2	46 10.8	55.9		9.5	55.7	50.7	
9.5	58.2	3.9		9.8	46.8	39.7		9.1	12.8	8.4	M	9.1	11.5	49.6	A	9.1	55 2.1	38.4	
9.2	23 1.8	5.2		8.1	54.1	32.5	A	10	25.2	20.5		10	21.0	2.8		8.5	3.0	0.5	M
8.3	5.5	10.8	A	9.8	56.7	33.3		9.9	25.9	8.8		8.2	29.0	48.7	A	9.4	6.4	55.2	
9.4	8.4	21.0		9.8	58.3	26.3		9.3	34.1	39.0		9.4	44.2	57.6		9.5	6.9	22.5	
9.1	11.8	12.8		9.5	29 4.6	59.9		9.2	40.3	50.8		9.5	44.9	37.6		9.5	18.5	2.7	
9.3	12.4	16.0		8.3	18.2	43.3	A	9.6	52.9	7.5		9.3	45.0	28.7		9.6	19.3	30.3	
9.3	17.5	16.1		10	29.8	32.6		9.5	58.1	36.3		9.0	47.9	9.1	M	9.6	51.6	16.5	
var	20.7	13.2	B	9.5	42.5	49.3		9.5	39 1.5	22.5		9.2	52.1	42.3	A	8.6	56 38.9	54.0	M
9.2	26.5	1.0	A	9.6	30 0.4	13.3		7.0	40.5	21.5	B	9.3	57.0	48.1		9.8	47.4	28.5	
9.5	29.0	11.8		9.5	1.2	4.0		9.1	43.6	44.9		9.5	58.2	7.8		9.5	57 10.8	5.2	
9.5	38.4	17.5		9.4	7.2	15.9		8.8	56.6	50.7		9.9	58.4	11.4		9.6	17.3	4.3	
9.8	38.6	26.6		9.1	7.2	39.5	A	9.5	40 4.9	5.4		9.4	47 10.5	23.7		9.6	20.7	58.4	
9.0	40.0	22.5		10	18.7	5.5		9.3	9.0	11.9		9.3	21.9	12.1		8.0	26.3	41.7	A
8.5	41.3	13.4	B	8.4	20.6	14.0	M	10	14.4	4.5		9.7	32.0	34.7		9.1	49.7	16.7	
9.5	42.7	33.8		9.2	31 3.3	55.0		9.5	20.8	37.5		9.5	53.2	6.5		9.5	54.5	4.5	
8.8	43.7	19.0		9.2	23.5	33.7		9.5	22.1	23.8		9.3	48 3.2	53.3	A	8.7	58 1.4	52.8	A
9.6	52.7	4.5		9.7	26.2	11.2		9.4	32.6	13.7		9.0	6.1	59.6	A	9.8	18.5	17.6	
8.7	55.3	33.5	B	9.5	41.5	46.4		9.5	40.4	2.7		8.6	7.6	48.7	A	9.8	19.3	32.5	
9.3	55.4	11.8		9.3	59.6	53.1		9.5	43.9	9.2		9.4	23.1	47.9		9.8	22.8	40.4	
8.0	58.0	4.4	A	9.5	32 1.7	19.8		9.0	57.1	10.3		9.3	32.5	35.8		9.8	31.6	57.0	
9.1	58.4	23.3	WZ	9.5	23.1	54.1		10	57.4	21.5		9.5	48.5	38.0		9.4	34.4	8.1	

5301—5360				5361—5420				5421—5480				5481—5540				5541—5600			
	18h—19h	—19°			19h	—19°			19h	—19°			19h	—19°			19h	—19°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
10	58 43.4	5.8		9.7	7 37.1	54.9		9.7	14 30.0	14.6		9.5	21 39.6	31.7		9.5	30 27.2	46.4	
9.2	43.8	53.6	A	9.8	48.8	10.4		8.3	35.6	15.4	A	8.2	40.3	41.2	B	10	31.8	59.6	
9.8	51.2	49.6		9.6	53.6	47.3		9.4	37.8	4.8		9.8	40.3	46.3		9.3	31.9	50.9	
8.8	59 6.4	35.8	WZ	9.6	8 2.6	48.0		9.2	53.5	56.0		9.5	22 3.3	32.6		9.0	34.2	32.2	A
9.4	10.6	46.0		9.9	9.0	37.0		9.5	15 5.0	55.4		9.8	15.9	54.9		8.8	59.1	55.9	M
9.5	10.8	19.9		9.5	11.4	29.1		9.7	6.6	53.0		9.4	22.0	13.3		9.2	31 16.8	21.9	
9.8	30.3	45.4		var	11.9	33.7	B	8.8	14.6	57.1	WZ	9.6	34.1	27.2		7.8	19.2	33.7	A
9.9	33.5	24.3		9.3	21.5	28.2		9.5	23.2	40.7		9.5	49.2	23.2		9.4	20.2	29.9	A
9.0	41.3	49.4	A	9.3	28.8	18.8	WC	9.5	24.1	23.5		9.5	57.8	28.8		9.4	27.9	57.7	
9.5	42.1	42.9		9.9	31.7	58.6		9.4	28.4	35.8		9.6	23 4.1	26.6		9.1	43.3	15.2	
9.4	44.1	7.9		9.4	34.4	34.1		9.7	31.9	11.7		9.8	5.3	31.7		9.6	45.1	9.0	
6.0	46.5	30.7	A	8.8	40.5	14.2	WZ	9.8	32.5	56.2		7.0	14.8	41.5	A	9.5	32 10.4	19.2	
10	54.0	54.9		9.4	48.1	22.5		10	50.8	42.5		10	22.4	15.3		8.6	22.3	52.2	A
9.5	59.1	8.6		9.4	52.3	18.1	WC	8.4	52.7	59.5	B	9.8	25.4	12.2		9.5	30.0	11.0	
9.5	0 1.5	58.1		9.1	54.6	27.4		10	58.8	45.2		10	30.8	46.6		10	51.8	54.2	
9.5	3.9	45.6		8.5	55.4	0.9	M	8.2	16 1.9	12.2	A	9.2	51.9	2.6		9.8	33 4.8	9.9	
7.4	14.2	10.5	A	9.2	58.6	59.4		9.6	10.8	53.0		9.3	52.8	26.7		10	7.4	20.7	
9.5	16.3	45.6		9.0	9 1.5	18.9	WC	9.1	20.3	10.4		9.4	24 35.9	8.7		9.4	10.6	56.3	
9.3	18.1	2.2		5.3	9.5	12.5	L	9.5	22.9	30.2		9.0	43.5	34.7	A	9.3	34 18.2	7.2	
9.3	25.4	28.8		8.8	14.8	52.7	WZ	10	25.4	51.1		9.8	47.8	55.3		9.5	25.0	0.4	
9.5	53.8	58.4		9.7	15.6	31.2		9.4	26.8	55.2		9.8	51.4	41.1		8.0	45.2	27.3	A
9.5	58.8	37.6	A	9.8	17.4	19.4		9.5	36.1	11.6		10	25 4.0	18.5		10	47.0	49.7	
8.5	59.4	38.1	A	9.8	23.0	15.9		8.9	37.7	19.8	WC	8.5	17.9	10.1	A	9.2	49.4	10.4	
9.0	1 6.4	12.2		9.0	25.5	40.4		9.6	50.2	42.7		9.7	19.7	53.9		9.5	35 1.3	7.5	
9.4	25.9	1.3		10	28.7	24.1		9.8	17 2.1	19.8		8.5	39.5	52.8	A	9.0	5.9	22.4	A
9.5	37.8	55.8		8.5	33.8	23.8	WZ	9.5	3.0	39.1	WZ	10	46.9	39.1		9.6	9.3	9.1	
9.0	52.6	53.5		8.0	42.9	7.0	B	9.7	6.6	13.3		9.5	26 0.3	59.1		9.4	11.2	48.8	
9.9	59.7	13.9		8.5	50.0	37.0	A	8.7	13.0	27.3	A	9.5	14.9	59.2		9.8	17.9	59.5	
9.4	2 10.6	38.6	M	9.6	53.4	19.4		9.5	16.8	19.0		9.7	15.2	21.3		9.8	20.3	12.9	
9.8	13.9	34.6		9.2	10 2.0	19.6	WC	9.7	42.3	40.8		9.8	28.4	40.8		9.8	26.2	37.7	
10	24.1	19.9		9.5	5.1	58.7		9.6	54.4	33.0		8.3	29.4	4.5	A	9.5	30.7	33.1	
9.5	34.8	24.5		8.8	17.4	58.8	M	10	18 19.7	47.0		9.8	47.0	38.1		9.8	37.3	26.2	
9.2	39.7	55.0	A	9.3	52.2	43.0		9.3	19.9	1.9		8.9	48.7	53.2	A	9.8	39.0	17.6	
10	48.0	25.5		var	56.6	17.0	B	10	23.1	24.7		9.3	27 6.9	47.2		10	53.3	53.3	
9.2	53.8	16.0		9.1	11 1.0	43.8		9.8	34.9	33.7		9.0	23.9	42.7	WZ	9.3	56.3	59.8	
8.8	3 14.5	25.6	WZ	9.4	18.1	32.4		9.8	43.8	40.3		8.8	36.8	54.6	A	9.5	36 1.4	18.5	
9.1	15.1	14.5		9.8	25.7	18.7		9.0	19 0.7	29.4	WZ	8.7	44.4	13.4	A	9.7	2.5	59.6	
9.3	23.2	55.6	A	8.0	29.8	37.5	B	9.7	16.7	55.3		9.4	47.2	23.8		9.8	24.9	45.2	
9.9	39.0	27.8		9.3	45.9	46.0		10	19.0	32.8		9.9	51.3	14.4		9.5	31.1	29.3	
9.5	4 2.1	43.1		9.5	48.0	2.5		8.6	19.3	3.4	WZ	9.3	54.5	5.4		9.7	43.0	53.7	
9.5	5.3	28.8		9.5	49.1	32.5		9.8	30.8	46.1		5.8	28 0.5	10.2	A	9.7	43.6	21.4	
9.3	5.8	54.5	A	8.8	57.2	7.5	A	7.8	34.6	37.9	WZ	9.3	1.1	18.8		9.8	45.7	34.6	
9.4	10.7	32.5		9.1	12 0.2	16.0	M	9.5	46.7	51.6		8.8	12.5	34.3	A	8.6	53.0	11.8	A
8.3	14.0	28.1	B	9.5	3.5	49.1		9.4	20 1.9	40.8		9.5	13.2	51.1		10	37 23.3	25.7	
8.6	33.3	43.5	A	9.5	5.9	25.5		9.6	9.5	34.6		9.5	19.2	37.3		9.5	29.5	43.9	
9.0	55.6	5.8	A	9.2	20.7	19.7	WC	9.7	21.3	47.0		7.8	23.4	5.7	A	9.7	35.0	16.5	
9.7	5 25.3	6.4	A	9.3	35.1	58.4		9.8	33.5	31.9		9.7	31.8	49.6		9.7	59.8	56.4	
9.2	25.9	40.1		9.1	58.6	22.8		9.8	34.3	46.0		10	44.2	28.1		9.4	38 1.3	44.2	
9.5	28.3	10.4		9.1	13 3.1	29.1		9.7	38.7	53.8		10	45.9	45.1		9.2	1.5	28.5	M
9.2	36.2	52.5		9.1	5.9	57.7		9.8	42.4	40.9		8.8	46.6	3.2		9.8	11.5	14.9	
9.5	43.9	32.5		9.5	6.1	51.6		8.5	58.3	9.0	WZ	9.7	58.0	14.2		10	14.0	24.8	
9.3	56.0	40.0		6.5	8.0	30.0	A	9.5	21 3.4	6.1		8.7	29 7.0	20.4	A	9.6	16.3	25.5	
8.7	6 15.7	13.1	A	9.4	21.5	37.4		9.5	6.9	1.0		9.6	32.5	43.6		10	25.2	32.5	
9.5	46.1	36.3		9.3	26.2	5.3		9.1	9.0	33.5	WZ	8.5	34.2	31.7	A	9.8	40.1	37.3	
9.5	56.0	20.9		8.3	34.4	23.1	B	9.0	11.3	47.1	A	9.2	45.0	13.2		9.2	44.8	24.8	
9.3	7 0.4	40.7		9.8	56.7	45.9		10	22.9	43.0		9.5	46.2	28.4		7.5	53.7	5.6	M
9.3	1.0	36.9	M	9.2	14 2.6	54.3		9.5	29.1	30.6		10	59.3	28.6		9.5	39 1.1	0.9	
9.5	9.5	39.4		8.3	7.2	17.6	B	10	32.0	29.8		9.3	30 18.5	40.6		9.6	8.5	58.2	
9.8	28.1	25.0		9.5	8.3	2.8		8.0	32.5	51.4	A	10	24.2	29.4		9.5	13.4	15.0	
9.6	35.9	36.2		9.8	18.5	59.9		9.6	36.7	21.5		9.4	26.6	34.5		8.5	19.7	33.8	M

5601—5660

m	19h m	s	—19° ′	
10	39	41.3	33.8	
9.5		49.7	59.9	
10		50.1	45.2	
10		51.6	19.2	
9.4		57.7	27.8	
8.8		57.9	9.7	A
9.6	40	4.2	42.5	
9.5		5.6	16.6	
9.5		37.2	42.8	
9.5		38.2	3.0	
9.5		43.4	28.7	
8.8		45.8	23.4	B
10		52.1	41.5	
10		59.2	40.9	
9.4	41	10.7	46.0	
9.0		21.2	43.5	M
9.5		26.9	29.6	
9.0		32.2	24.0	A
8.6		42.8	15.1	B
9.7		48.8	1.6	
8.8	42	2.4	30.0	
9.0		6.7	39.0	WZ
9.9		14.3	38.3	
9.9		20.4	7.6	
9.2		39.0	59.6	
9.5		45.1	16.2	
9.6		48.2	40.1	
7.8	43	8.8	34.6	B
8.5		32.4	9.0	A
9.6		43.4	30.4	
6.5		46.5	24.5	R
8.8		56.9	8.5	A
9.4	44	3.7	38.0	
8.3		10.6	44.2	M
9.5		12.3	33.2	
9.3		32.0	4.8	
8.9		44.8	38.1	M
9.8	45	37.1	53.2	
9.0		47.4	41.6	WZ
9.2		47.5	52.3	
9.4		56.1	59.0	
7.8	46	5.4	18.5	M
8.8		7.1	50.0	M
9.4		11.0	20.8	
9.5		17.0	23.6	
9.8		28.1	23.7	
8.5		36.9	8.5	M
10		41.0	42.5	
10		48.1	42.9	
7.0		57.8	39.8	A
10	47	14.1	5.0	
9.8		19.2	36.9	
8.0		32.2	14.9	A
9.5		37.7	17.1	
9.8		52.6	56.3	
9.0	48	35.5	56.7	
9.5		40.9	31.5	
10		50.4	30.0	
9.0		57.9	13.4	A
9.6		58.5	30.4	

5661—5720

m	19h m	s	—19° ′	
8.6	48	59.3	54.9	M
9.7	49	18.3	43.5	
9.3		30.2	45.9	
9.7		37.3	38.5	
9.5		49.2	7.0	
8.5		51.0	0.1	A
9.3	50	41.7	55.3	
9.5		47.2	42.1	
9.5		50.4	37.6	
8.5		50.5	59.6	WZ
9.6	51	43.2	19.0	
10		43.5	0.6	
10		49.0	1.0	
9.3	52	7.6	27.4	
10		8.3	11.8	
9.8		10.6	19.0	
10		12.3	52.5	
9.8		26.2	8.3	
9.8		50.4	52.9	
7.3	53	36.5	29.9	A
9.5		45.3	40.8	
9.5	54	0.3	1.7	
8.6		17.0	32.0	WZ
9.5		19.4	41.4	
9.3		45.8	49.4	
9.7		57.0	7.4	
9.5	55	8.7	27.5	
9.0		13.7	21.7	
8.8		28.3	11.6	A
9.5		43.5	20.7	
9.5		53.8	48.9	
9.5	56	6.2	58.5	
9.8		13.6	3.1	
9.3		22.6	55.5	
9.6		22.7	18.7	
9.3		35.9	40.1	
7.8		39.4	10.8	A
9.5		39.9	59.4	
9.5		48.3	55.0	
9.0		51.6	7.0	A
9.5		59.2	56.1	
10	57	3.1	49.9	
9.2		32.5	46.6	
8.3		40.1	6.5	B
9.2		40.9	8.0	
7.0		49.7	53.5	B
9.3	58	16.0	36.1	
9.4		33.1	4.5	
9.2		34.3	12.2	
9.4		39.0	51.5	
9.5		39.3	29.1	
9.3		41.6	29.4	
9.8		54.2	39.1	
7.8		55.6	59.4	A
10	59	7.3	3.7	
9.0		8.4	44.9	A
9.8		22.2	49.4	
8.7		25.5	36.4	A
9.3		37.9	44.2	
9.5		49.5	59.3	

5721—5780

m	19h—20h m	s	—19° ′	
7.0	59	49.9	12.7	A
9.0	0	20.2	56.3	M
9.5		42.9	52.6	
8.5		53.6	49.8	M
9.5		57.9	16.9	
9.0	1	10.8	19.3	A
9.1		17.0	41.1	
9.8		17.3	19.1	
9.6		34.7	14.6	
9.0		44.6	40.6	
7.0		59.4	48.2	A
9.3	2	46.3	23.5	
9.6		56.7	58.5	
10		58.6	4.0	
9.6	3	3.9	33.5	
9.6		15.3	37.1	
9.3		37.3	21.3	
9.8		53.4	45.0	
9.9	4	7.2	0.1	
9.6		21.2	10.7	
9.6		23.3	42.5	
8.5		25.2	8.9	WZ
8.7		28.6	31.1	WZ
9.5		28.7	48.5	
9.8		51.0	45.6	
9.4	5	15.4	56.0	
10		48.5	47.4	
9.8		54.0	29.0	
9.7		57.8	23.8	
9.5	6	3.4	52.5	
9.5		16.6	13.9	
9.8		17.5	46.4	
8.0		20.1	38.9	B
9.5		43.3	58.9	
9.2		57.3	10.5	
8.5	7	20.0	21.4	M
9.8		23.1	15.4	
9.1		39.7	59.0	A
9.5		56.1	17.4	
9.5		59.0	43.1	
9.5	8	3.4	1.7	
9.3		14.6	41.5	
9.3		33.4	51.1	
9.5		33.9	50.0	
9.5		42.3	45.7	
8.5		57.0	43.2	WZ
9.4	9	1.3	4.8	
9.8		5.7	26.6	
9.8		11.9	20.1	
9.5		48.4	28.6	
8.2	10	5.6	44.0	WZ
9.1		10.0	49.4	
9.4		27.3	15.1	
9.5		33.2	54.8	
9.5		42.7	39.3	
5.7	11	1.6	33.8	L
9.0		3.2	35.1	WC
9.5		12.6	14.7	
9.5		28.7	57.2	
9.5		49.1	36.8	

5781—5840

m	20h m	s	—19° ′	
9.8	11	59.3	46.2	
9.5		59.4	1.9	
9.1	12	3.9	59.8	A
9.2		19.3	4.6	
9.1		28.7	33.5	WC
9.5		29.8	42.2	
9.8		34.4	20.3	
8.9		45.4	11.1	WZ
9.8		45.6	47.0	
9.9		48.3	22.8	
9.5		48.5	52.2	
9.0		57.4	0.7	M
9.0	13	10.2	32.1	WC
9.8		33.9	2.5	
9.9		35.3	21.3	
8.4	14	1.6	8.6	A
9.8		11.0	51.4	
9.3		41.8	28.3	
9.4		48.0	59.1	M
9.8	15	7.9	15.4	
9.8		17.2	37.5	
9.4		21.6	53.3	
10		21.6	28.9	
9.2		34.9	11.7	WC
9.8		41.7	54.8	
9.1	16	3.7	54.0	M
9.4		8.1	20.4	
9.1		11.8	14.1	WC
7.0		41.6	53.4	B
9.0		43.8	10.0	WZ
9.4		57.3	36.0	
9.6	17	6.2	36.6	
7.7	18	0.8	37.2	B
9.6		13.0	59.5	
8.9		29.6	18.9	WZ
9.2		49.5	1.7	
8.8		54.2	0.1	
9.4		57.3	38.3	
9.5		58.4	5.0	
9.4	19	1.9	28.7	
10		10.8	3.3	
10		14.1	28.6	
9.4		48.2	48.4	
9.7	20	7.9	31.5	
9.7		26.8	56.2	
9.5	21	12.3	51.4	
9.6		16.2	22.0	
9.7		19.4	55.5	
8.5		23.5	33.9	WZ
8.3		33.7	3.6	A
7.1		35.6	3.2	A
9.5		45.1	8.5	
9.7	22	1.3	21.5	
10		24.7	35.6	
8.7		25.4	55.6	WZ
9.6		36.6	34.0	
9.0		40.1	36.2	A
9.6	23	24.1	0.0	
9.8		36.3	37.4	
9.7		40.8	7.1	

5841—5900

m	20h m	s	—19° ′	
9.6	23	50.9	49.0	
9.6		59.9	49.9	
9.3	24	2.0	10.2	
9.3		2.2	45.6	WZ
9.5		27.5	46.3	
8.5		42.1	47.1	M
9.5		57.4	28.0	
9.5	25	25.0	48.8	
9.4		28.7	37.2	
8.2		49.6	46.5	A
10		53.5	23.6	
7.8	26	6.9	53.2	A
9.3		16.9	25.1	
9.5		40.0	17.1	
9.6	27	0.0	56.5	
9.1		2.7	35.4	A
9.5		4.8	33.9	
9.4		5.6	16.9	
10		14.3	15.5	
9.6		20.5	19.1	
8.5		22.7	34.7	A
9.4		28.2	41.9	
9.7		54.1	46.0	
9.3	28	2.0	26.6	
9.4		38.8	38.9	
9.4		46.1	57.0	
9.0	29	8.7	45.1	
8.9		30.1	16.5	B
9.8		51.4	36.2	
8.7		53.8	17.8	B
9.5	30	7.7	57.3	
8.7		10.3	8.6	B
9.6		14.1	26.6	
9.3		33.3	41.0	
9.3		36.7	42.3	
9.3		53.5	50.9	
7.8		56.6	46.9	B
9.8		57.2	11.8	
9.5	31	9.0	17.0	
9.6		9.3	12.7	
9.1		11.4	31.0	
9.4		12.3	55.8	
9.5		16.5	44.2	
10		24.0	50.6	
9.7		25.8	59.4	
9.5		28.5	16.0	
9.8	32	6.4	41.0	
8.9		17.0	3.7	A
8.2		31.5	17.3	A
10	33	17.2	34.1	
9.5		17.5	58.1	
8.5		26.1	34.2	B
9.5		40.4	35.0	
9.0		51.7	49.0	M
9.0		58.8	6.3	A
9.5	34	14.2	22.5	
9.5		25.7	46.2	
9.5		30.1	39.1	
9.5		33.2	24.6	
9.8	35	3.8	56.1	

5661: 59.94 54′36.7 B_1, Ep. 1883.65

5889: 31.63 17′20.8 B_1, Ep. 1883.65

5901—5960				5961—6020				6021—6080				6081—6140				6141—6200			
	20h		−19°		20h		−19°		20h—21h		−19°		21h		−19°		21h		−19°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.1	35	7.6	59.5	B	9.6	47	1.8	5.1		9.8	58	49.0	45.7		8.0	13	35.0	20.7	B	8.5	31	23.9	52.0	A
9.0		12.7	37.7		9.7		4.4	12.4		8.2		54.4	16.6	WZ	9.8		43.5	0.7		9.5		24.3	4.5	M
9.1		18.0	8.6	WZ	9.0		11.2	29.8	A	9.5	59	12.0	56.0		9.0		53.3	50.2	A	9.3		24.5	52.2	
9.5		23.1	44.4		9.5		22.0	41.7		7.0		16.2	39.7	P	9.2	14	10.3	56.2	A	9.6	32	5.9	48.7	
7.3		36.3	51.3	A	9.1		27.7	34.8	A	9.1		48.1	33.7	A	10		43.0	29.0		8.6		6.3	5.1	WZ
9.5		51.7	14.6		8.2		30.6	7.8	B	9.0		48.7	30.6	A	10		43.0	2.3		7.5		29.3	33.0	R
9.8	36	3.3	24.3		8.9		49.6	34.9	A	9.4		57.9	42.9		9.5	15	1.6	42.9		9.3		54.6	56.7	
9.5		10.9	38.2		9.5	48	41.4	54.2		8.3	0	37.3	18.4	A	9.7	16	1.8	15.8		9.4		58.3	20.9	
9.0		17.5	34.0	A	8.8		58.0	20.5	A	9.2		45.1	12.5	M	9.7		16.5	10.5		9.5	33	55.3	58.0	
9.2		30.3	21.0		9.1	49	14.8	28.9	A	9.5		52.2	47.7		9.7		33.2	12.2		9.8	34	12.7	7.1	
10		50.0	37.1		9.0		25.5	15.3	A	9.8	1	5.6	55.2		9.5		47.2	40.8		9.5		12.9	16.0	
9.6		53.6	33.3		9.8		56.9	23.0		9.0		20.0	0.3	WZ	8.5		47.9	34.0	R	5.0		32.4	31.2	A
9.0	37	13.3	34.8	A	9.7		59.5	13.6		9.5		38.9	8.1		9.5	17	28.0	39.9		9.5		57.7	49.9	
9.0		29.4	41.6	A	9.8		59.5	45.3		9.8		39.8	16.1		8.0		34.8	12.4	B	9.8	35	24.2	12.2	
9.5		43.0	29.0		9.8	50	19.0	52.0		9.1		39.9	8.7		9.6		53.2	31.5		9.5		27.0	30.3	
9.8		43.7	26.6		9.4		27.2	41.5	WC	9.5		43.5	26.3		9.4	18	25.3	26.4		8.9		48.8	15.0	M
8.8		48.4	39.8	A	9.1		44.1	42.6	WC	9.5	2	8.8	59.2		9.0		52.4	1.3	A	9.4	36	4.8	17.5	
9.3		49.3	36.3		8.2		48.4	28.3	A	8.7		11.4	2.8	A	7.5		53.3	40.8	WZ	9.1	37	18.1	14.6	M
9.5	38	1.2	27.9		9.3		58.7	43.7		9.1		25.3	50.7		8.0	19	4.1	56.4	WC	10	38	44.9	46.7	
8.8		11.1	20.2	A	9.2	51	3.9	44.1	WC	9.5		29.2	26.3		9.0		36.9	48.8	A	9.0		48.8	4.1	WC
7.0		20.2	58.0	A	9.6		13.3	59.9		8.8		48.1	35.4	WZ	9.8		40.7	0.5		8.8	39	19.1	44.2	WZ
9.5		22.8	46.1		6.2		20.8	35.8	A	9.7	3	11.6	29.1		9.5	20	2.8	44.1		9.5		21.4	20.5	
9.5		25.9	37.6		9.7		36.7	57.5		9.5		25.7	18.1		10		22.3	10.2		9.1		37.1	29.4	WZ
9.1		35.9	10.0		9.0		52.3	35.3	WZ	9.8		35.0	6.0		9.2		23.2	18.2	A	9.6	40	11.1	19.7	
8.0	39	7.3	8.9	A	9.2	52	1.8	36.2		9.5		37.0	4.6		10	21	44.4	21.5		9.1		14.3	2.2	A
9.5		26.7	30.3		9.8		7.6	47.8		9.5		52.8	46.0		10		47.7	42.3		9.3		41.5	27.3	
9.5		45.6	21.6		9.8		10.8	22.8		9.6	4	0.1	21.4		6.5		50.4	46.6	A	9.2		56.6	16.0	
6.5		55.2	47.3	B	9.2		33.0	16.4		9.5		31.4	47.3		9.8	22	1.5	39.5		9.9	41	4.8	0.2	
9.7	40	10.0	31.4		9.8		47.7	5.7		9.4		32.9	0.4	A	9.3		7.3	15.1		7.8		16.9	3.7	A
9.5		40.5	33.4		9.4		58.5	56.6		9.8		44.8	47.3		9.5		40.2	0.2		9.1		30.6	16.9	R
9.7		46.8	15.7		8.3	53	11.7	29.0	A	9.8		55.1	32.1		9.7		47.0	14.9		9.3		31.4	19.8	WZ
9.2	42	17.6	31.0		9.5		14.0	11.0		9.5	5	1.7	44.9		8.8	23	12.6	57.6	A	8.6		55.7	22.1	R
9.7		22.0	4.0		9.5		16.4	46.5		9.0		32.8	35.6		7.3		16.5	52.0	A	9.6	43	16.9	4.4	
9.3		23.1	30.6		9.6		35.0	24.0		9.3		38.2	22.1		9.0	24	13.0	40.2	WZ	9.0		21.3	31.9	R
9.4		44.9	8.3		8.9		42.9	48.5	A	9.0		54.3	26.8	A	9.8		24.4	16.3		9.4		34.6	19.5	
9.5		59.0	58.2		9.4		55.3	54.5		10	6	2.8	13.6		8.7		42.4	13.2	WZ	6.6		38.0	17.5	A
9.7	43	4.3	58.0		9.4	54	16.4	21.5		10		34.7	34.7		8.7	25	6.7	12.2	WZ	9.0		45.2	31.1	R
9.5		38.6	59.6		7.0		29.9	48.7	A	9.5	7	34.3	25.1		9.8		9.1	59.6		9.0	44	4.8	48.6	M
9.5		42.5	5.6		8.5		51.8	52.8	A	10		43.6	51.6		9.1		17.0	41.0	A	9.6		11.9	28.2	
8.8		53.0	36.9	WZ	9.8	55	17.5	19.8		9.5	8	2.4	50.4		9.2		27.1	18.8		10		12.5	12.5	
9.5		55.9	55.5		9.8		32.0	19.5		9.0		8.1	56.7		10		40.5	32.4		9.0		46.0	3.0	WZ
8.3	44	4.6	17.0	WZ	9.4		41.1	2.8		9.3		37.4	23.2		9.5		57.1	43.5		9.5		51.3	41.2	
9.5		27.9	30.9		9.4		42.6	21.7		9.0	9	2.9	29.9		9.6	26	10.9	4.7		9.5		56.3	42.5	
9.2		30.7	10.1		9.4		42.9	2.1		9.5		31.4	31.1		9.6		16.9	2.4		8.8		58.9	49.7	A
9.8		32.8	15.3		10		45.1	56.8		8.3	10	1.2	18.0	WZ	8.5		22.6	50.0	A	9.9	45	22.8	14.9	
9.4		42.4	9.5		9.5		49.8	54.2		9.5		3.5	28.7		8.5	27	11.1	52.5	A	9.5	46	11.8	29.1	
9.5		45.9	46.7		9.5		57.8	14.0		9.5		22.9	34.5		9.6		11.8	40.5		9.6		44.8	14.0	
9.8	45	6.0	6.8		8.4	56	1.3	5.6	A	9.3		23.5	50.3		8.2		25.5	24.8	A	9.7	47	49.9	27.7	
9.8		12.8	3.7		9.2		7.9	53.5		9.5		33.4	5.5		9.4	28	5.6	37.8		9.3	48	42.5	46.5	
6.5		15.7	39.5	A	9.1		17.5	17.0		9.5		35.9	24.1		9.7		8.5	19.0		8.0	49	3.0	52.3	A
9.7		19.6	19.5		9.5		53.7	49.6		10		43.8	48.4		7.8		16.4	2.4	M	8.9		7.9	23.9	WZ
9.8		31.3	21.4		9.2		55.0	17.4		9.5	12	4.2	57.1		9.2		35.9	18.3	A	10		10.4	10.7	
9.4		33.6	19.9		9.5	57	9.0	20.7		9.0		8.3	32.7	R	7.7		52.3	23.2	A	8.8		16.5	34.8	R
7.3		50.4	32.4	A	9.3		18.6	39.2		9.6		19.5	32.3		7.5	29	15.0	4.8	A	10		43.0	9.1	
9.4		58.1	58.8		9.5		48.1	15.9		9.9		21.1	12.0		9.6		24.2	22.5		9.8		56.0	50.8	
9.8	46	1.0	18.0		9.5		54.5	53.8		9.6		36.0	33.0		7.8		30.7	52.3	B	9.5		58.0	40.5	
9.8		13.5	42.5		9.7	58	23.7	44.7		10	13	2.0	48.2		9.5		47.9	13.8		10	50	13.9	1.1	
8.6		16.8	23.5	A	9.6		27.7	14.5		9.0		6.4	46.9		8.5	30	35.6	20.1	A	8.8		25.8	14.7	A
9.3		24.9	53.9		9.7		46.5	20.0		8.8		8.0	26.6	M	10		42.7	33.4		9.8	51	37.6	22.4	
7.0		31.1	20.3	A	9.8		48.4	32.3		9.0		20.7	47.8		9.1	31	20.6	5.4	M	9.8	52	3.0	26.6	

6201—6260

	21h—22h	−19°	
m	m s	′	
9.6	52 16.4	12.6	
9.5	56.6	13.8	
9.3	53 12.6	17.2	
9.5	12.7	58.3	
9.5	39.6	43.5	
9.5	41.1	56.0	
9.4	54 31.2	39.5	
9.6	55 17.7	31.2	
9.6	43.8	57.8	
9.5	56 19.6	8.2	
9.5	48.7	30.5	
8.2	52.8	46.3	R
9.6	57 7.5	56.6	
9.0	13.6	32.5	
9.5	28.5	16.8	
9.5	38.1	48.2	
7.5	48.7	22.0	A
9.0	54.8	37.8	A
9.8	58 33.8	29.8	
9.3	37.9	36.7	
9.5	50.4	49.9	
9.5	59 14.9	22.3	
9.4	0 6.0	56.8	
9.6	14.7	6.9	
8.8	21.9	47.9	
9.9	50.2	38.2	
6.0	1 1.2	13.4	B
8.5	8.7	11.2	A
9.8	17.0	33.3	
8.7	21.0	41.5	WZ
9.0	29.7	8.9	A
8.8	30.7	9.6	A
9.4	2 10.2	38.2	
9.4	14.8	5.6	
9.1	20.6	55.7	
9.6	3 9.3	6.3	
9.0	19.8	38.3	
9.4	29.7	22.9	B
9.4	43.1	14.9	A
9.4	4 23.3	48.7	
9.1	31.4	58.1	
9.8	53.7	13.9	
9.7	5 20.8	17.5	
9.8	37.9	49.8	
9.7	43.3	49.3	
9.2	46.4	10.1	A
9.8	6 6.7	19.1	
9.4	22.3	37.4	
6.5	23.3	57.3	A
8.6	47.8	24.4	
9.4	54.9	31.0	B
9.8	7 48.2	12.7	
9.1	57.4	46.4	
9.7	8 14.0	50.7	
10	9 3.5	38.2	
9.2	23.5	31.3	
9.8	58.0	46.2	
9.4	10 21.1	55.4	
10	24.5	32.4	
9.7	48.6	49.5	

6261—6320

	22h	−19°	
m	m s	′	
9.4	11 39.1	37.0	
8.9	12 35.1	56.2	A
9.5	36.0	27.9	
9.4	38.2	53.7	
8.0	13 29.4	13.9	M
9.2	14 28.1	0.4	
10	16 43.7	49.9	
9.9	17 1.4	58.6	
9.7	7.9	56.0	
9.0	19.3	39.6	
9.5	35.8	24.7	
9.5	50.8	26.1	
8.5	18 11.9	5.2	A
9.1	17.4	55.1	
8.0	23.8	17.9	
9.2	33.8	24.5	
9.4	45.1	45.5	
9.0	49.8	23.6	
9.6	56.6	44.9	
9.2	19 26.9	41.1	
9.1	20 57.8	27.6	M
9.5	21 45.5	45.8	
9.8	49.0	6.5	
9.7	49.5	46.0	
9.5	58.4	37.9	
9.9	22 6.0	25.2	
9.3	7.2	3.2	
9.8	11.2	45.8	
9.3	12.1	8.9	A
9.8	58.0	42.2	
8.7	59.2	55.8	A
9.1	23 16.1	48.8	
9.5	16.9	15.1	M
9.8	37.0	18.3	
9.7	43.8	18.7	
9.8	24 27.6	32.6	
9.8	36.3	42.5	
9.7	25 11.5	17.1	
8.0	26 19.1	25.5	
8.0	32.3	47.4	A
9.8	50.6	8.5	
10	51.3	20.0	
8.3	27 18.9	10.1	A
9.9	41.3	38.8	
9.8	28 24.5	0.5	
8.2	46.5	1.2	A
9.4	29 1.3	45.0	
9.2	5.3	38.3	B
9.6	18.9	55.3	
9.6	30 32.4	36.1	
9.3	53.9	36.8	
9.2	55.5	38.1	A
9.4	31 5.4	44.3	A
8.7	49.0	52.7	A
9.7	32 3.4	11.8	
6.7	12.2	56.9	A
9.3	56.0	39.0	R
8.5	34 1.9	19.1	A
8.6	13.8	11.5	A
9.8	35 14.7	2.0	

6321—6380

	22h	−19°	
m	m s	′	
9.8	35 21.2	0.2	
9.4	42.9	47.5	
9.8	46.7	19.2	
5.1	46.7	35.0	L
9.2	58.1	28.8	
8.8	36 9.4	2.4	M
9.6	18.7	41.3	
9.2	43.0	51.0	M
10	37 2.6	2.4	
8.4	4.5	34.8	
9.7	23.2	45.1	
9.5	37.8	32.2	
9.8	38 7.5	9.1	
9.8	27.2	10.4	
10	27.7	2.3	
8.0	43.5	3.0	A
8.5	39 44.4	55.7	A
9.7	40 2.1	15.1	
9.9	15.2	1.1	
9.0	24.3	47.4	A
9.2	41 2.3	51.2	A
8.8	5.1	22.4	R
9.0	32.9	10.0	
9.2	42.3	34.7	R
9.8	42 40.9	48.3	
8.5	43 8.3	30.0	WZ
9.2	57.2	1.9	
9.5	44 18.8	1.7	
8.7	24.3	33.1	L
9.2	25.9	42.8	A
7.5	49.5	48.5	A
10	52.4	11.4	
10	45 31.3	21.9	
9.5	39.2	20.3	
9.5	51.4	1.8	
9.8	46 16.6	42.4	
6.4	18.5	56.7	A
10	19.6	44.2	
9.2	40.2	48.8	A
9.8	46.4	55.5	
9.9	47 7.7	33.7	
9.8	16.7	25.5	
9.5	52.9	32.3	
9.4	48 5.1	31.7	
9.6	20.4	27.6	
9.1	23.0	8.2	A
9.8	29.5	59.6	
10	33.2	17.2	
9.7	49 8.6	20.9	
9.7	10.2	15.6	
10	39.2	57.4	
9.6	51.6	43.0	
8.8	50 12.5	8.2	WZ
8.7	18.1	44.6	A
8.7	19.6	28.5	A
8.6	28.2	9.8	A
9.8	29.3	1.1	
9.3	51 3.0	23.0	
9.1	59.7	41.5	
9.1	52 11.8	52.7	

6381—6440

	22h—23h	−19°	
m	m s	′	
9.1	52 23.4	15.5	
9.9	32.1	29.7	
9.1	53 28.2	58.1	R
8.9	43.2	5.1	A
9.6	59.8	40.7	
8.7	54 24.0	14.9	A
8.5	34.9	43.6	WZ
7.0	54.0	19.3	B
10	55 5.8	15.7	
10	13.4	10.6	
9.1	13.7	25.3	
9.1	24.3	12.2	A
9.2	51.2	42.3	
9.4	56 50.8	1.9	
8.9	57 12.6	52.3	A
9.8	24.5	32.2	
9.2	29.3	9.0	
8.7	58.4	8.6	WZ
9.4	58 16.9	26.2	A
9.7	39.5	7.9	
9.2	59 13.1	21.1	A
9.5	26.1	58.5	
9.5	36.8	2.6	
8.7	0 20.4	59.3	A
9.4	22.7	55.7	
9.3	45.5	1.3	
9.3	58.4	54.7	
8.0	1 2.0	32.2	B
8.8	4.6	49.9	A
8.6	44.1	24.6	
9.0	59.1	56.5	
8.7	2 23.1	29.1	A
9.8	26.2	46.5	
9.0	3 10.6	42.4	WZ
9.4	20.2	31.0	A
8.7	22.1	25.6	A
9.2	58.7	5.1	A
9.8	4 9.3	44.9	
9.8	12.2	28.1	
9.4	18.6	17.3	A
9.3	58.7	33.2	
9.9	59.5	37.2	
9.5	5 14.0	15.4	
9.7	29.7	18.4	
7.3	36.2	9.5	A
8.5	6 51.4	39.7	A
10	7 53.5	46.7	
9.5	9 16.9	24.2	
7.0	19.0	39.7	A
9.1	33.4	33.4	A
9.1	10 3.0	32.5	A
9.5	38.5	33.3	
7.0	50.5	37.6	A
8.5	54.1	10.9	A
9.7	59.9	9.1	
9.3	11 23.9	0.6	
9.1	31.5	29.2	A
8.6	48.6	20.9	A
9.1	50.3	14.7	
9.8	12 11.0	8.9	

6441—6500

	23h	−19°	
m	m s	′	
10	12 17.5	4.6	
10	13 3.6	58.2	
9.3	14.4	11.5	
7.5	16.6	46.6	A
7.3	17.4	20.1	A
10	20.1	28.2	
10	15 0.9	43.1	
8.2	16 6.8	54.2	A
9.5	17.7	12.1	
6.7	28.9	29.0	A
9.8	17 12.0	13.1	
9.4	26.0	36.0	
10	18 43.6	30.6	
9.5	19 14.5	22.4	
10	20.1	42.8	
9.5	27.8	59.9	
9.2	33.6	38.0	W
9.2	20 14.7	51.2	
10	42.5	22.4	
10	54.1	41.9	
9.6	56.8	10.9	
9.6	21 1.6	42.5	
9.4	28.6	34.9	W
8.8	22 9.6	18.9	W
9.4	20.7	23.9	
9.3	25.2	29.6	
8.6	23 1.3	29.6	W
9.5	48.8	46.3	
9.5	24 43.2	22.8	
8.6	47.4	51.0	A
9.3	25 31.4	48.1	
8.4	55.9	56.7	A
9.2	59.4	10.7	
9.2	26 40.7	11.6	A
9.5	27 35.4	33.8	
8.5	37.4	22.2	A
9.8	38.9	42.1	
9.0	28 20.0	44.8	A
9.6	29 21.2	8.0	
9.4	21.6	18.6	
9.5	29.1	51.6	
9.8	31 31.3	11.5	
9.8	39.4	8.9	
9.7	41.2	19.5	
9.0	56.7	52.6	A
9.6	32 11.7	30.2	
9.1	24.7	38.2	W
9.2	43.3	59.9	
7.8	33 2.7	47.5	A
9.8	8.2	34.0	
9.6	40.3	55.3	
9.9	51.2	14.5	
9.3	52.6	20.4	W
9.8	55.5	7.8	
9.5	34 3.3	45.2	
9.7	5.7	12.4	
9.9	35 24.8	39.2	
10	37.1	40.8	
10	36 36.9	43.3	
5.8	40.5	4.7	E

6433: nach Schulhof (A. N. 83.1981) var 7—7½ 6489: 2:61 47′27.″1 B_4, Ep. 1872.00

6501—6510

m	23h m	s	−19° ′	
9.4	36	46.8	55.2	
9.1	37	2.9	35.7	A
9.5		9.1	6.8	
9.9		37.9	32.8	
9.3		49.6	4.5	
5.0	38	28.9	28.8	A
10	39	3.0	46.0	
9.1		6.1	8.2	
9.1		8.5	33.8	A
8.3		36.9	58.5	A

6511—6520

m	23h m	s	−19° ′	
9.3	40	43.6	53.1	A
9.6		46.0	0.8	
8.0	41	0.3	41.5	B
9.5		21.4	56.8	
9.2		41.4	0.8	
9.4	42	24.5	12.7	WZ
9.5		52.7	49.5	
9.4	43	2.1	3.9	
7.3		16.8	5.7	A
9.8		22.1	15.2	

6521—6530

m	23h m	s	−19° ′	
8.5	43	39.2	51.1	B
5.0		51.7	42.9	B
9.6	44	1.5	10.7	
8.7		25.2	28.2	A
8.8		53.2	1.2	A
9.4		56.7	22.2	
7.5	45	10.6	21.9	B
10		13.1	12.3	
9.8		43.7	12.7	
8.7	46	0.2	4.2	A

6531—6540

m	23h m	s	−19° ′	
9.1	46	5.3	10.6	
9.1		15.9	1.2	A
7.8		17.5	10.1	A
9.3		17.8	5.5	
9.7		38.2	37.0	
9.6		43.3	5.2	
9.5		51.3	15.2	
9.4	47	21.8	23.7	
10		25.9	11.7	
8.5		26.6	56.2	WZ

6541—6550

m	23h m	s	−19° ′	
9.0	47	27.4	32.6	A
9.7	48	26.9	17.9	
9.5	49	33.0	53.7	
9.0		49.8	12.1	A
9.4	50	3.1	15.4	
9.4		35.9	46.5	
9.5	51	0.2	13.7	
9.4		5.4	45.8	
8.0		43.6	20.6	WZ
9.5		51.0	21.7	

6551—6560

m	23h m	s	−19° ′	
9.3	52	14.6	14.7	
9.1		21.9	33.4	
8.5		22.8	18.9	WZ
9.6		46.1	53.3	
9.6		54.8	21.8	
9.8	53	9.7	22.7	
9.3		27.0	40.1	
9.0		47.6	49.3	A
10	54	4.1	20.9	
9.2		8.6	57.1	

6561—6570

m	23h m	s	−19° ′	
10	54	47.8	2.3	
9.7	57	33.6	40.8	
9.2		39.4	16.6	
9.1	58	2.5	23.7	WZ
9.6		19.1	7.5	
9.8	59	11.3	13.3	
9.0		21.6	36.7	A
9.8		29.8	38.1	
9.8		35.9	15.6	
8.3		37.2	37.8	A

Zone −20°

1—40				41—80				81—120				121—160				161—200			
	0h	−20°			0h	−20°			0h	−20°			0h	−20°			0h—1h	−20°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	0 17.8	49.6		9.0	12 2.3	55.7	A	8.6	23 3.9	39.0	WZ	9.1	35 9.6	31.8		9.5	47 38.3	15.4	
9.9	46.7	28.6		8.8	25.5	26.8	A	9.6	38.0	51.8		9.0	25.4	25.7	WZ	10	59.3	34.2	
9.1	55.2	1.0	A	10	25.8	43.3		10	24 13.1	10.5		7.0	27.9	59.3	A	9.1	48 9.0	55.1	
9.1	58.8	1.9	A	9.1	31.4	59.0		8.8	25 26.6	36.5	WZ	9.1	34.5	54.5		9.1	25.9	37.8	
9.8	1 46.3	43.5		9.3	55.0	49.4		10	52.2	40.5		9.9	36 42.0	57.9		9.6	32.9	35.7	
10	48.4	18.5		9.4	56.7	9.8		8.0	26 2.1	17.8	WZ	9.9	37 2.2	12.5		9.5	49 9.4	34.8	
9.9	58.0	12.2		10	13 20.6	4.0		9.8	28.7	22.8		9.8	35.7	31.2		7.8	19.8	13.9	W
9.5	2 15.9	26.5		7.8	31.9	43.7	A	9.5	52.7	25.7		8.3	45.5	5.5	A	9.0	19.9	39.3	
9.0	46.6	47.4	A	9.5	52.2	6.0		8.6	27 9.3	7.8	A	8.7	39 8.5	53.5	WZ	9.0	59.4	6.8	A
9.1	3 39.1	12.8		5.5	14 23.4	51.3	B	9.6	18.7	47.5		8.7	28.6	13.2	A	9.2	50 0.7	37.2	
10	39.9	48.5		9.5	30.7	6.0		9.5	58.7	34.7		8.7	29.1	44.9		9.5	27.3	0.5	
9.7	48.8	58.5		9.1	46.5	59.4	A	9.4	28 44.5	1.6		9.3	49.9	33.9		8.8	27.7	45.1	
9.7	4 2.1	0.3		9.8	16 1.2	7.1		9.2	59.2	28.3		8.3	40 6.8	45.4	WZ	9.7	51 4.9	4.0	
9.5	2.5	15.7		9.9	27.6	52.1		9.8	29 3.3	25.0		9.4	17.9	29.2		7.0	34.5	25.1	A
9.6	15.5	25.9		9.3	39.7	42.6		9.4	53.0	16.1		9.5	48.5	12.7		7.8	53.0	6.8	A
9.0	26.4	30.8	A	8.8	17 26.7	39.3	WZ	9.0	57.9	31.1	WZ	9.8	41 31.1	52.3		10	52 8.9	33.4	
10	27.2	18.4		8.3	36.8	44.7	A	7.8	30 7.9	21.7	A	10	33.4	12.3		10	11.4	3.5	
10	50.9	13.8		10	46.8	14.1		9.8	12.1	48.2		8.8	45.5	29.8		9.2	58.8	47.9	
10	51.1	22.5		7.7	18 18.3	43.8	A	10	17.6	1.4		10	48.4	1.8		8.0	53 18.1	10.2	E
8.9	5 16.1	0.0	A	9.0	19 12.7	36.6		10	25.0	8.3		9.8	42 5.6	41.9		10	21.2	46.5	
9.8	22.0	58.2		9.2	15.2	47.7		9.5	27.1	43.4		9.4	15.2	57.5		7.2	32.5	52.5	A
10	35.7	8.5		9.5	38.4	16.1		9.5	30.4	12.5		9.3	32.9	43.5		9.9	32.7	34.3	
9.5	50.6	39.1		9.5	45.3	17.8		9.4	56.2	43.3		9.4	34.0	34.6		8.0	54 38.1	11.8	A
9.5	6 1.6	22.5		9.6	51.9	17.8		10	57.3	40.0		9.8	41.9	11.4		9.8	51.5	1.7	
9.3	5.6	47.4		9.6	58.4	17.8		9.5	59.6	22.1		9.7	42.7	23.6		10	51.6	24.1	
10	31.0	47.1		9.5	20 0.9	15.2		9.5	59.7	8.5		9.2	43 25.6	41.7		8.2	58.2	26.7	A
9.8	7 2.1	23.8		6.5	18.7	56.3	B	9.8	31 2.7	50.0		9.3	44 19.3	53.9		10	55 57.2	10.8	
9.7	15.2	37.3		9.8	23.9	27.0		9.3	15.0	51.1		8.3	51.7	12.5	A	10	56 35.2	25.3	
9.9	54.3	44.6		9.0	26.5	7.1	A	8.7	21.9	32.1	A	7.8	45 20.7	41.0	A	9.3	57 10.9	34.3	
9.5	8 12.7	14.9		9.8	27.3	27.7		9.6	26.8	56.9		9.5	21.1	15.8		9.3	54.9	42.9	
10	37.7	7.2		9.6	29.2	17.4		9.8	49.3	48.9		9.2	36.1	42.6		8.2	58 6.3	37.8	W
8.0	9 0.3	12.0	WZ	9.5	29.6	46.2		8.5	57.0	53.1	A	10	42.1	8.0		9.0	30.8	20.8	
9.2	57.2	8.4		9.6	35.7	2.5		9.0	32 2.4	39.6	A	9.5	58.1	45.7		9.5	44.4	34.0	
9.6	10 4.5	8.5		9.3	21 16.6	40.1		9.3	28.0	36.4		9.8	46 15.4	52.5		8.5	55.3	21.7	
9.5	27.7	57.3		10	37.5	15.0		9.4	30.5	38.4		9.8	16.6	0.9		10	59 6.9	11.2	
9.1	30.1	18.6		10	46.5	3.1		10	33 7.0	28.6		10	17.9	7.8		8.5	9.3	50.0	W
9.8	11 8.4	1.7		9.0	56.5	20.4		9.7	55.6	39.5		9.5	25.4	53.1		9.7	14.2	2.7	
9.1	17.9	37.0		9.7	22 11.7	36.4		8.9	34 3.5	39.9	A	9.3	40.1	6.9		9.0	22.8	50.0	
8.9	24.0	9.7		9.2	21.1	10.1		9.5	11.6	13.4		9.3	47 1.0	54.8		9.9	40.4	43.5	
9.5	44.9	21.2		9.7	51.0	40.5		9.5	35 2.3	57.1		9.8	3.2	27.3		9.9	0 0.2	30.8	

50: Chandler (A. N. 105.2517) var 5.2—<6.3

201—260				261—320				321—380				381—440				441—500			
1h		—20°		1h		—20°		1h		—20°		1h—2h		—20°		2h		—20°	
m	s	′		m	s	′		m	s	′		m	m	s	′	m	m	s	′	
0	0.5	49.8		9.8	17	16.8	36.0	9.2	36	7.1	25.0	10	53	42.1	35.0	8.9	14	44.1	59.2	
	2.9	22.5		8.2		18.7	17.5	A	9.2		14.7	43.6	9.4		45.8	57.2	9.8	15	16.9	50.2	
	34.6	4.9	A	10		25.5	39.7		10		26.3	39.2	10		49.4	23.2	10		37.7	48.2	
	59.4	50.8		10	18	7.3	26.4		8.3		35.4	8.1	A	9.5	54	5.3	16.5	9.7	16	6.6	38.9	
1	5.1	48.2		9.1		36.7	48.0		9.8		43.3	37.5		9.1	55	5.1	25.9	9.6	17	12.0	47.0	
	22.5	55.7		9.3		44.7	46.5		9.6	37	7.2	31.0		9.5		35.9	12.8	10		52.6	36.4	
	53.0	9.2	A	9.7		54.3	8.3		9.7		25.1	26.9		9.8		48.0	17.0	8.1		57.3	42.0	A
	55.1	59.8	A	10	19	12.8	35.8		9.3		35.5	8.4		9.0	56	1.5	19.6	9.0	18	11.5	56.2	
2	26.0	9.9	A	8.3		49.3	24.0		9.5		51.3	46.8		9.5		35.2	45.3	9.4		21.9	57.7	
	41.1	59.6	B	9.8	20	37.2	15.3		8.5		51.7	52.7	A	9.5		52.7	53.8	9.0		24.1	29.1	
3	16.2	49.1	A	8.5	21	2.9	33.3	A	9.0	38	13.5	46.4		8.9		54.4	35.2	8.8		58.2	58.1	
	57.2	32.9		9.6		5.3	33.5		9.5		43.2	30.2		9.8	57	13.5	45.3	9.0	19	7.6	53.7	
	57.9	29.6		10		21.5	49.0		9.2		45.9	36.6		8.3		27.1	3.9	A	9.3		20.2	40.7	
4	20.7	21.4	A	8.9	22	21.0	27.8	A	9.2	39	27.7	58.8		9.8	58	40.6	45.5	9.8		41.8	16.0	
	37.6	25.9	A	9.0		35.9	34.1	A	9.5		33.3	21.1		9.4		57.0	42.5	6.0		50.8	42.2	B
	47.6	19.7		9.8		52.6	26.5		9.6		50.2	42.6		8.9	59	1.6	5.5	A	9.8	20	1.2	1.4	
5	8.7	43.3		8.5	23	1.2	20.7	A	10		52.5	44.5		10		10.4	57.4	9.8		17.7	12.6	
	37.0	10.6		9.8		3.3	49.4		10		53.1	33.4		9.4		58.8	24.5	9.5		28.6	40.5	
6	9.8	14.8		9.8		13.0	28.7		9.5	40	10.7	11.5		9.6	0	1.8	23.7	10		39.3	19.0	
	35.8	46.8	A	10		34.7	43.7		9.8		42.2	52.4		9.8		11.0	30.8	9.4		41.9	23.8	
	57.7	6.7		10		40.2	18.0		9.3	41	4.3	56.8		10		17.5	31.0	9.6	21	14.7	10.1	
7	0.0	10.0		8.8	24	24.0	32.9	A	9.5		58.4	20.9		9.8		34.3	27.2	10		38.5	57.0	
	59.8	27.2	A	9.6		43.7	43.5		9.9	42	19.9	58.5		9.5	1	24.5	53.6	7.8		58.4	27.1	B
8	29.3	33.2		9.3		57.0	14.2		9.7		33.9	56.0		7.3	2	27.8	15.0	A	9.9		59.3	12.6	
	37.4	14.2		8.7	25	22.2	21.1	A	9.8		38.9	21.0		9.5		49.0	54.9	8.5	22	13.1	38.3	
	44.0	1.8		9.8		57.8	19.5		9.3		45.4	22.1		8.7		51.7	17.7	A	9.7		16.6	36.5	
9	0.9	34.4	A	9.3	26	8.6	46.3		8.8		59.1	1.7		8.8	3	1.1	57.7		9.3		21.7	22.6	
	32.5	56.5		9.1		12.1	30.5		10	43	20.0	26.4		8.5		48.4	52.8	A	9.9	23	1.0	53.0	
	40.8	52.5	B	9.8		25.2	27.6		8.7		25.6	36.0		10	4	11.5	29.6		9.8	24	6.2	14.6	
10	23.4	15.4		8.8		26.3	50.9	A	8.9		27.8	55.1		9.4		45.9	3.4		9.5		47.3	40.4	
	26.5	11.9		9.5		30.2	42.3		8.7		39.4	45.9		8.8		48.4	15.1		9.5	25	2.9	32.1	
	43.7	42.4		9.8		36.7	3.4		10	44	2.5	22.0		9.0	5	2.3	6.3		10		8.4	12.0	
	59.5	24.7		9.1	27	13.3	1.9	A	10		3.8	41.6		9.5	6	5.2	10.3		10		26.2	35.4	
11	25.7	57.4	A	9.5		40.4	49.3		9.2		31.7	38.5		9.5		20.0	50.8		9.5		37.6	23.5	
	30.5	7.5		9.5	28	19.5	45.0		10	45	6.3	7.5		8.9		22.5	45.9	A	9.4		48.3	2.0	
	32.6	44.1		9.2	29	34.2	21.7		9.3		28.7	34.9		10		43.7	18.5		9.0		52.9	48.9	
	35.5	29.4		9.9		55.3	18.0		9.6		47.1	30.8		9.6		56.7	59.7	A	9.3	26	13.2	54.2	
	40.6	45.0		7.8	30	15.4	6.5	B	7.5		56.4	13.4	A	8.6		57.9	13.2	A	9.0		29.6	17.9	
	45.6	9.3		9.7		42.2	47.0		9.4	46	19.6	30.1		9.5	7	23.3	0.3		9.8		39.0	8.7	
	51.1	53.3		9.7		45.0	38.0		9.1		42.0	17.6		10		42.4	17.0		6.7		58.8	38.1	B
	51.7	32.3		9.6	31	50.4	4.0		9.8		47.8	54.0		9.5		44.6	51.5		8.5	27	4.6	15.0	
12	5.5	18.2		9.8		51.4	49.4		9.5		50.9	27.0		9.8	8	43.6	44.5		8.7		22.8	39.2	
	8.1	41.4		9.9	32	13.9	44.7		9.5	47	13.2	36.2		10		44.8	39.4		9.2	28	29.3	22.7	
	14.2	52.1		9.2		44.5	26.5		10		47.2	7.1		9.2		50.3	40.8		9.4		35.4	39.2	
	37.2	46.6		9.7	33	21.8	11.6		9.9		51.6	56.8		9.2	9	14.9	47.1		9.3		56.7	24.5	
13	5.6	37.9		9.5		22.4	59.3		9.3	48	10.8	13.1		9.1		40.0	44.2		9.8	29	2.2	31.2	
	13.2	38.4		9.2		32.3	52.1		9.5		22.2	58.1		9.8		45.2	56.7		9.5		4.2	11.7	
	24.7	18.2		9.0		33.7	22.3	A	9.3		51.6	53.0		9.8	10	0.5	55.8		9.1		7.9	31.4	A
	26.2	42.2	A	8.7		42.0	49.8		9.3	49	26.0	9.4		9.3		0.7	30.6		10		24.4	0.4	
	38.1	11.8		9.0	34	3.9	15.1	A	9.3		28.1	25.8		9.8		14.0	11.8		8.9		42.3	26.7	A
14	9.1	5.7		8.7		21.6	40.3	A	9.5		45.7	34.6		9.4		18.3	34.1		9.0		50.8	27.4	A
	19.2	16.1		9.8		26.9	42.2		9.9		57.0	29.2		8.0		24.4	40.2	B	7.2	30	9.4	45.6	A
	19.5	5.2		9.5		48.9	17.0		9.8	50	28.2	52.3		8.6		49.2	15.0	A	9.7		10.1	20.9	
	44.2	27.5		9.4		52.1	34.1		10		37.2	33.7		9.8		51.6	18.8		9.3		10.3	36.6	
	52.1	33.0		10		54.6	28.0		9.4		51.4	37.2		9.3	11	28.9	39.0		8.9	31	26.5	49.2	
15	16.7	20.4	A	8.2	35	34.5	5.1	A	9.5	51	19.6	55.7		9.3		53.0	24.3		9.5		48.2	51.4	
	21.6	45.2		9.3		36.0	58.7		9.1		48.9	28.3		7.2	12	6.6	12.5	A	9.4	32	23.4	53.0	
16	24.4	6.4		7.0		40.9	54.5	B	8.7	52	52.7	55.0		8.3	13	13.1	41.9	A	8.2		37.1	47.6	A
	26.1	20.9	A	10		44.1	26.5		9.9	53	8.9	23.9		9.1	14	18.6	39.2		9.4		47.7	40.3	
	31.3	39.9		10		59.9	17.0		9.8		15.0	21.1		6.7		29.0	34.5	A	9.3	34	40.0	19.1	

501—550

	2h		−20°	
m	m	s	′	
9.0	34	54.9	12.9	A
8.8	35	13.0	49.2	
9.4		31.5	1.1	
8.9		39.1	3.3	
9.0	36	12.4	40.1	
7.5		18.1	55.4	B
10	37	10.4	2.1	
9.5		33.3	39.5	
9.8	38	2.6	19.1	
10		33.7	58.5	
8.9		58.5	41.4	
9.2	39	35.2	53.9	
10		37.8	12.4	
9.8		37.9	16.6	
9.4		55.2	2.6	
9.4		55.6	47.1	
10	41	7.6	10.2	
8.6		32.0	34.9	
9.4		32.4	11.4	
9.8	42	13.3	59.4	
9.9		36.1	48.3	
9.8		50.2	38.6	
8.6	43	5.6	50.9	A
8.2		9.5	50.9	A
10		18.0	35.0	
9.2		37.7	5.1	
9.3		40.2	5.2	
8.2		53.5	43.6	A
9.8		56.0	34.7	
9.8	44	23.4	48.4	
9.6		48.9	52.5	
10	45	25.5	21.4	
9.2		39.1	41.1	
8.8		50.5	46.9	
9.2		58.4	13.7	
9.8	46	0.2	35.2	
10		31.4	50.6	
9.9	47	38.6	23.9	
10		39.8	18.7	
8.5		45.9	42.9	A
9.6	48	15.6	58.4	
9.2		39.3	43.9	
9.9		39.8	10.9	
10		41.2	8.3	
9.4	49	1.3	22.5	
7.5		5.1	21.0	B
9.8		22.0	13.1	
9.3		30.2	26.2	
9.3		33.9	47.7	
9.5		41.7	25.4	
9.3	50	10.8	1.8	
9.7		30.6	11.5	
10		53.1	49.2	
10	51	3.2	0.2	
10		6.1	3.0	
9.8		8.1	40.2	
9.8		15.5	8.4	
9.7		32.5	40.9	
10		35.9	29.3	
9.6		57.9	4.9	

561—620

	2h—3h		−20°	
m	m	s	′	
10	52	40.0	37.0	
9.4		46.3	40.1	
9.8		47.8	14.4	
9.0	53	19.5	4.2	
9.1		24.3	20.7	
9.4		26.4	27.1	
9.5	54	6.6	6.6	
9.7		30.6	42.1	
9.0		49.0	34.5	
8.8	55	41.0	28.8	
9.2		42.7	40.7	
9.3	56	11.9	17.5	
9.5		24.0	23.3	
8.5		40.7	10.3	
8.4		46.3	47.7	A
9.0	57	0.8	9.6	
9.4		14.1	0.2	
9.5	58	8.5	53.0	
9.1	59	21.3	57.8	
9.4		22.4	8.0	
9.8		32.5	13.1	
10	0	4.6	18.6	
9.5		33.6	21.1	
10	1	2.4	37.4	
9.6		18.8	21.5	
9.2		25.2	8.0	
9.6		31.2	0.2	
8.5		42.7	58.5	B
8.8		42.9	14.6	A
10	2	51.4	29.6	
7.9	3	2.9	34.5	A
7.5		13.1	0.8	B
9.5		49.3	26.0	
8.9		53.9	45.9	
9.4		59.1	9.7	
7.2	4	7.9	39.9	A
9.8		16.7	17.5	
9.8	6	2.7	9.9	
9.4		5.3	4.6	
9.5		14.6	41.6	
9.4		24.5	17.6	
6.5		25.9	34.1	A
9.2	7	4.9	1.4	
9.1		39.4	14.5	
6.7	8	42.2	33.5	B
9.7	9	44.5	43.1	
9.5		51.8	7.3	
9.7	10	1.1	42.2	
8.9		4.4	46.4	
9.3		16.9	28.8	
9.5		19.8	47.7	
9.8		25.3	9.6	
9.8		40.0	16.2	
10	11	8.8	44.2	
9.3		33.3	15.8	
9.6	12	13.2	29.5	
9.5		30.4	9.7	
9.5		56.5	13.8	
9.7	13	50.6	48.7	
9.0		53.5	14.7	A

621—680

	3h		−20°	
m	m	s	′	
9.6	14	2.0	21.4	
9.6		4.1	50.3	
9.5		19.9	6.6	
9.5	15	9.5	14.7	
6.6		10.0	50.9	A
8.5		28.8	33.6	A
9.8	16	9.3	3.2	
9.8		29.0	19.7	
9.6		41.4	34.7	
9.6	17	11.7	21.1	
9.7		52.2	50.2	
9.0	18	10.8	49.4	A
9.3		23.1	50.4	
9.8		42.0	19.5	
9.5		48.6	15.8	
9.3	19	6.5	51.1	
9.4		13.7	24.2	
9.2		51.9	32.8	
9.8	20	19.4	30.7	
9.6		23.8	4.4	
9.6		34.9	31.7	
9.8		54.4	50.4	
8.0	21	16.5	18.8	B
9.0		28.8	44.1	A
8.5		36.7	15.0	
9.0	22	23.9	28.6	
9.5		35.3	57.7	
7.0		54.1	3.0	B
8.9	23	23.8	2.9	
8.9		24.9	8.0	
9.5		40.5	34.6	
9.4	24	10.0	16.0	
9.4		10.1	47.6	
9.2		16.8	20.2	
9.2		25.0	30.3	
9.3		45.4	41.3	
9.8	25	0.5	53.0	
9.2		25.6	14.2	
8.0		26.3	51.4	
9.4	26	47.2	1.4	
8.6	27	11.6	33.6	A
9.1		28.6	38.7	
8.3		30.0	51.7	B
9.8		34.0	52.5	
9.4		35.0	5.9	
9.5		44.8	9.4	
10	28	2.4	50.7	
9.8		3.2	35.7	
10		5.5	53.7	
10		6.8	25.9	
10		21.1	5.4	
9.6		24.2	37.5	
8.9		27.5	19.4	A
9.2	29	9.3	4.7	
9.4		12.9	11.2	
8.7		18.1	30.6	A
8.2		26.7	38.0	A
10		33.1	41.8	
10	30	47.9	7.3	
8.5	31	17.2	57.2	A

681—740

	3h		−20°	
m	m	s	′	
9.2	31	20.8	46.1	
9.3		27.0	13.8	
9.8		29.8	45.5	
7.3	32	21.9	41.3	A
8.5	33	1.3	35.2	A
6.5		42.8	3.6	A
6.6	34	53.8	2.9	A
9.4		59.6	44.7	
9.5	35	7.0	38.1	
8.5		11.1	49.9	
9.5		30.0	6.7	
9.3	36	30.5	58.5	
9.6		36.1	8.5	
9.2	37	17.4	35.3	
9.5		30.3	25.7	
9.2	38	0.1	44.4	
9.2		5.4	56.1	
10		42.1	0.9	
9.7		52.1	46.0	
7.3		55.0	58.3	B
8.7	39	4.6	42.0	B
9.5		41.4	9.8	
9.9		53.6	1.5	
10	40	23.7	5.5	
9.2		38.1	40.0	
9.8		48.4	23.8	
9.4		59.4	3.5	
9.7	41	17.7	18.5	
10		19.2	19.1	
9.4		29.4	2.2	
9.3		32.5	32.5	
9.0		35.7	6.4	
9.3		44.3	16.2	
8.4		59.0	51.6	A
9.0	42	4.6	59.8	A
9.0		59.5	22.5	A
9.0	43	10.8	8.6	
8.5		20.3	51.8	A
9.0		26.1	29.8	A
8.5		48.1	13.5	
9.7		55.3	8.4	
9.2	44	0.6	33.8	A
9.5		8.1	26.8	
9.8		57.8	49.1	
10		57.9	32.4	
9.5	45	31.3	12.3	
8.5	46	7.7	32.9	A
9.8		15.0	21.9	
9.2		29.6	30.0	A
9.0		44.3	20.5	A
9.5		44.3	41.0	
8.8		57.0	38.9	A
9.5	47	23.6	18.5	
9.8		39.2	28.7	
8.0	48	11.5	53.1	A
8.5		19.5	14.7	A
8.5		24.4	55.4	A
8.7		28.2	23.1	A
9.7		43.0	58.1	
9.3	49	8.9	19.6	

741—800

	3h—4h		−20°	
m	m	s	′	
9.6	49	18.7	33.2	
9.9		33.4	59.9	
8.8		48.2	0.7	A
9.0	50	8.3	45.3	
9.5		41.4	40.0	
9.7		54.7	49.2	
9.7	51	1.6	51.8	
9.2		17.7	19.7	
8.6		19.0	41.6	A
9.5		22.7	47.6	
9.0	52	36.4	32.6	A
9.7		48.5	41.4	
9.3		59.2	19.6	
9.3	53	1.8	1.0	
7.2		2.0	44.8	A
9.8		5.6	8.9	
9.8	54	9.7	54.6	
8.3		29.4	44.5	A
9.3		39.7	3.7	
10	55	3.5	38.7	
9.8		10.1	51.6	
7.8		29.2	52.7	A
9.3		35.4	26.8	
9.5		39.1	50.0	
9.8	56	13.1	55.3	
9.0		20.8	17.4	
7.7		31.7	54.6	A
8.0		46.2	54.5	A
6.0	57	1.0	32.5	B
7.0		13.0	33.3	B
8.0		25.6	37.2	B
9.0		37.0	30.8	
9.7		47.9	50.4	
6.0	58	17.9	46.4	A
9.8		19.8	35.1	
9.7		28.3	10.0	
9.8		37.5	56.1	
9.3	59	1.8	25.3	
9.1		6.2	7.4	
7.0		24.7	54.6	A
9.7		42.3	53.0	
9.1	0	8.1	38.7	
9.7		11.7	47.8	
9.0		26.0	52.2	A
9.8		32.9	14.7	
9.2	1	15.8	55.4	
9.1		28.4	1.8	
9.0		51.2	34.6	
9.5		51.7	16.6	
8.4	2	3.3	52.6	B
8.2		18.6	27.1	B
8.4		43.7	39.5	B
8.8		56.4	48.3	
9.1	3	9.0	43.0	
9.8		19.6	27.7	
9.5		20.9	51.2	
9.8	4	40.4	5.9	
8.7		41.4	25.7	A
9.1		58.0	10.5	
8.6	5	12.1	42.8	A

801—860

m	4h m	s	−20° ′	
6.1	5	14.7	44.2	A
9.1		43.5	51.6	A
9.6	6	1.0	42.4	
9.1		9.2	42.5	
9.0		23.6	17.7	A
9.4		29.8	44.8	
8.7		36.9	13.4	A
9.6		40.8	28.2	
9.4	7	38.5	9.2	
9.1		40.1	1.4	
9.7	8	14.3	44.6	
8.6		49.0	21.2	
10	9	12.0	1.8	
9.5		59.5	46.4	
9.5	10	31.6	4.9	
9.3		54.8	18.0	
9.5		58.5	41.0	
9.5	11	17.4	27.7	
8.8		25.2	14.3	
9.4		42.9	4.1	
9.1		43.1	56.7	
9.5	12	0.8	22.3	
9.8		14.7	9.8	
8.9		17.7	40.9	
10		43.9	25.7	
9.5		56.4	49.2	
9.2	13	15.0	38.4	
9.4		29.9	14.7	
9.2		33.5	13.3	A
9.8		55.4	23.9	
5.0	14	19.3	59.1	B
9.1		27.2	55.1	
8.7		37.0	9.9	A
8.3		55.6	31.6	
9.3	15	16.0	26.3	
9.5		28.1	30.8	
7.8	16	26.2	34.9	
9.8		45.7	38.7	
7.8	17	16.6	36.0	B
8.8		25.5	23.0	
8.3		40.7	55.7	
8.3		47.0	26.6	B
8.8	18	22.8	57.9	
9.6		31.1	41.0	
9.3		39.0	22.3	
9.4		49.4	59.7	
9.7	19	35.1	21.3	
9.4		38.6	18.3	
9.2	20	0.9	56.7	
9.2		1.1	39.7	
8.3	21	4.3	41.9	A
9.0		41.8	33.2	
9.8		42.7	9.0	
9.2	22	2.6	45.2	
9.7		25.9	2.3	
9.5		37.5	37.6	
9.4		40.0	57.3	
9.5	23	2.6	18.9	
8.5		2.8	47.4	
10		30.6	0.9	

861—920

m	4h m	s	−20° ′	
9.2	23	34.2	9.9	
9.2		44.6	58.9	
9.8		46.4	51.5	
9.8	24	27.1	4.3	
9.5		50.7	32.7	
9.4		52.0	54.0	
9.2		58.8	59.8	
9.8	25	11.1	30.0	
9.1		21.2	18.8	
9.0	26	1.6	10.1	A
9.3		49.4	32.2	
8.8	27	1.3	4.1	A
9.8		2.2	31.8	
9.1		10.7	2.5	
9.1		29.5	48.0	
9.3		42.8	7.7	A
9.4	28	13.5	37.8	
9.5		14.2	3.5	
9.1		14.3	34.7	
5.5		39.2	13.4	A
8.6	29	2.7	21.7	B
9.6		6.4	59.8	
8.0		30.3	18.5	B
8.4		35.9	28.6	A
9.3		47.5	35.7	
9.5		49.7	21.5	
8.6	30	37.9	24.0	B
9.4		52.7	10.4	
9.0	31	7.5	1.7	
9.8		9.0	26.5	
8.8		14.1	29.8	A
6.8		42.7	58.9	A
9.7		50.4	13.2	
9.1	32	5.4	2.5	
9.7		25.8	47.0	
9.0		43.3	1.0	
9.4		53.5	2.3	
9.7		53.7	25.6	
9.1		56.5	33.9	A
9.7	33	19.6	8.3	
9.6		21.4	34.2	
9.6		24.8	28.5	
9.0		28.4	11.2	A
9.3		30.2	21.3	A
9.6		50.9	44.7	
8.8	34	3.1	47.0	A
9.8		25.3	42.4	
9.2		29.9	0.5	A
9.4		53.2	8.5	
8.8	35	24.1	23.7	
9.8		52.7	44.0	
9.7	36	8.8	19.0	
9.8		11.5	10.8	
9.3		19.7	43.0	
9.4		27.7	3.5	
9.0		30.9	25.5	A
9.4		34.1	44.9	
9.0		35.1	3.7	A
9.3	37	10.2	58.1	
9.0		20.8	18.2	

921—980

m	4h m	s	−20° ′	
9.3	37	23.0	37.0	
9.6		23.9	56.3	
7.5		30.4	37.8	A
8.3	38	28.1	16.9	A
8.0		36.3	32.6	A
9.1	39	17.5	58.7	
9.5		18.6	14.6	
9.6		28.9	6.0	
9.4		56.4	55.1	
10	40	1.2	46.3	
9.1		8.1	17.9	
9.5		44.3	52.9	
9.5	41	3.1	19.6	
8.4		23.9	39.2	
8.8		27.0	12.0	
9.5		54.2	19.6	
9.6		57.7	14.0	
7.7	42	4.5	6.6	A
8.3		18.8	40.9	A
9.2		50.9	59.3	
9.5		52.3	52.1	
8.9	43	5.7	9.0	A
9.5		49.3	47.3	
9.6		52.8	15.7	
9.4	44	56.0	31.6	
9.4	45	5.9	45.0	
9.0		34.2	39.3	
9.4	46	27.2	11.8	
9.2		28.4	41.1	
9.8		30.2	7.1	
9.4		31.2	9.8	
9.5		43.8	41.2	
8.8		51.4	31.1	A
9.5		57.9	50.2	
9.0	47	25.5	31.7	A
9.5		33.4	31.8	
9.5		35.7	2.8	
9.8		40.6	47.7	
9.8	48	11.0	59.8	
9.4		18.9	19.2	
8.4		32.1	37.7	A
9.8	49	44.3	4.9	
9.6		59.7	15.0	
9.0	50	2.3	17.7	
9.5		11.6	6.1	
8.8		24.4	42.1	A
9.4		25.5	22.0	
9.5	51	6.3	44.6	
9.5		12.1	31.2	
10		17.3	2.3	
9.8		40.2	56.5	
8.8		47.6	24.6	A
9.5	52	13.0	16.2	
9.3		26.1	45.8	
8.6		28.7	46.3	
9.6		47.5	33.1	
8.8		55.6	52.3	
9.8	53	22.6	41.9	
9.8		57.7	57.5	
9.3	54	14.4	42.0	

981—1040

m	4h—5h m	s	−20° ′	
9.6	54	19.7	46.4	
9.5		21.7	2.4	
9.3		22.1	6.1	
9.5		30.6	39.2	
9.7		39.8	45.6	
9.0		43.7	57.9	
9.8		48.2	49.0	
9.0		58.0	18.1	
9.0	55	4.7	55.9	
5.3		8.5	15.8	A
9.5		38.7	33.5	
9.2	56	6.6	2.2	
9.7		44.5	16.9	
10	57	0.7	38.6	
9.5		6.7	54.0	
9.5		8.4	11.8	
8.9		19.8	41.3	
9.6		30.3	45.0	
9.4	58	4.8	56.5	
9.1		11.5	39.7	
9.1		17.8	16.9	
8.2		18.2	31.9	A
7.2		33.7	27.0	A
9.3		37.9	47.6	
9.4	59	4.2	31.3	
9.5		35.9	0.4	
9.0	0	1.6	20.1	A
10		3.7	18.4	
8.3		19.6	47.9	A
9.5		20.5	37.4	
9.7		33.7	54.9	
9.7		40.3	6.4	
8.5		42.8	18.5	A
9.9	1	17.8	45.6	
7.3		43.6	18.6	A
9.0	2	50.3	21.8	A
8.5		53.7	25.0	A
9.8	3	7.0	39.1	
9.7		37.3	39.8	
9.8	4	9.2	50.3	
9.3		11.8	30.1	
8.5		12.4	16.7	A
9.8		16.0	0.1	
9.3		22.3	30.0	
7.3		29.4	55.8	
9.4		41.6	1.7	
10	5	15.3	28.5	
9.0		22.2	20.3	
9.5		37.6	18.7	
9.2		53.6	49.2	
9.3	6	8.1	11.4	
9.6		19.3	28.8	
9.4		29.5	55.2	
8.5		39.2	45.5	
8.8		40.7	18.3	
8.1	7	13.4	42.2	A
9.3		19.8	38.4	
9.8		24.4	20.9	
9.8		50.3	41.8	
8.8		54.1	21.5	

1041—1100

m	5h m	s	−20° ′	
9.5	7	58.7	10.6	
9.4	8	3.2	2.6	
9.8		25.8	52.9	
9.6	9	5.0	17.5	
9.2		36.3	34.3	
9.1		49.7	55.3	
9.0	10	7.9	47.4	
9.9		14.0	16.3	
9.3		20.3	0.8	
9.5		21.0	16.1	
9.0		32.1	56.0	
9.6		40.7	45.0	
9.0	11	2.8	59.7	A
9.2		13.0	27.1	
9.8		22.4	39.1	
9.5		54.4	10.0	
8.8	12	46.2	1.4	A
10		57.5	45.0	
8.5	13	25.5	47.7	B
9.4		43.4	9.6	
9.0		46.5	14.4	
9.5	14	15.6	18.8	
9.2		25.1	46.2	
9.3		28.3	47.2	
9.5	15	27.2	23.8	
9.2		32.4	4.0	
9.3		40.2	41.0	
9.4	16	2.3	4.0	
9.2		11.8	25.5	
7.6		19.4	0.9	A
9.1		20.6	11.0	WC
9.5		37.4	38.3	
9.1		45.2	41.5	
9.5	17	7.0	8.6	
9.1		37.4	58.2	
9.3		38.3	29.7	
7.8		39.8	51.9	B
9.1	18	7.8	43.7	
8.9		28.3	27.0	
9.2		30.2	23.4	
8.8		41.0	46.8	A
9.3		45.6	10.2	
9.7	19	10.6	29.4	
9.4		53.2	55.6	
7.5	20	11.2	50.6	A
9.6		27.9	8.1	
9.1		40.8	1.3	
9.4		42.5	54.2	
9.8	21	8.0	59.3	
9.1		16.3	38.8	
8.2		38.4	55.8	A
9.5		40.6	3.3	
9.2		43.7	29.0	
9.1		50.5	59.4	
8.8		56.1	31.4	
3	22	1.4	52.7	A
8.8		3.5	1.0	
9.3		24.5	47.6	
9.6		36.6	22.9	
9.3		56.4	9.7	

1101—1160				1161—1220				1221—1280				1281—1340				1341—1400			
	5h		—20°		5h		—20°		5h		—20°		5h—6h		—20°		6h		—20°	
m	m	s	′	m	m	s	′	m	m	s	′		m	s	′		m	s	′	
9.1	23	3.1	39.9	9.5	36	42.2	41.7	8.3	47	14.6	10.8	A	9.1	59	27.2	4.9	9.2	9	36.6	42.1	
9.5		58.0	12.2	8.3	37	6.4	15.4	A	9.8		27.3	44.0		8.6		39.9	39.6		9.5		43.3	32.2	
9.2	24	14.4	7.9	8.3		6.8	44.1		9.5		47.4	27.0		9.5	0	4.7	53.5		9.5	10	5.4	32.4	
9.7		43.5	23.2	9.1		8.6	47.3		9.5		47.9	3.3		9.3		41.6	39.3		9.4		17.5	12.7	
6.0		55.1	58.2	B	9.2		21.3	27.5	A	9.0		49.1	54.9	A	9.5	1	21.7	39.2		8.0		21.2	9.4	A
9.4	25	13.8	36.6	8.8		24.2	25.5	A	9.8	48	21.6	53.8		9.0		28.1	51.5		9.5		24.4	47.6	
9.8		30.3	5.3	9.8		25.7	18.8		9.4		48.8	32.1		9.1		38.9	33.1		8.3		24.9	35.3	A
8.9	26	4.3	19.0	9.3		45.9	42.4		9.5		52.7	59.2		9.5		56.0	7.0		9.8		50.3	52.5	
9.2		8.3	2.5	9.1		54.1	12.5		9.0		57.9	17.1	A	9.5	2	1.9	35.1		9.1	11	4.7	49.4	
9.6		14.9	12.9	10	38	6.4	34.6		9.4	49	7.5	5.7		9.4		14.2	20.1		9.5		39.8	23.7	
9.5		16.4	50.3	6.5		13.9	11.6	A	9.3		36.9	39.4		9.5		14.8	6.9		9.8	12	18.0	10.5	
9.3		19.2	42.7	9.0		26.9	45.6	A	8.2	50	10.3	3.4	A	9.4		16.6	18.3		9.4		19.1	33.2	
9.2		25.6	27.5	9.4		34.2	46.8	WC	8.8		11.8	21.7	A	10		30.3	47.6		9.5		27.1	12.0	
10		25.6	59.5	9.5		41.6	12.7		9.4		21.9	7.6	A	9.1		33.8	51.0		9.3		30.8	29.8	
9.5		36.3	20.0	8.7		43.8	33.1	A	9.4		41.3	2.3		9.3		41.5	12.6		6.3		47.7	51.7	B
9.7		42.2	14.5	9.5		49.3	32.2		9.0		42.7	41.4		9.4		48.2	40.3		9.5	13	2.2	48.6	
9.5		46.5	29.4	8.5	39	7.0	9.2	A	9.4	51	3.7	27.9		8.8	3	0.6	39.7	A	9.5		9.0	13.4	
8.8		52.7	31.2	A	9.4		10.1	16.4	A	9.1		22.3	48.8		9.0		3.2	27.8		9.2		39.4	49.1	A
8.5	27	41.4	45.2	9.8		31.8	43.9		9.0		27.8	33.3	A	8.8		8.4	54.0		8.5		45.3	28.2	A
9.2		59.5	8.6	9.4		41.4	33.9		9.4		48.8	46.3		9.1		11.5	39.0	A	10	14	1.3	37.9	
9.5	28	7.0	50.7	9.7		52.3	45.6		9.2	52	11.3	40.0	A	9.5		13.4	3.7		10		20.6	17.3	
9.5		39.1	13.5	9.5		55.7	17.4	A	8.0		13.9	10.7	A	9.0		16.0	46.7		8.8		23.4	37.0	A
9.5		41.4	43.9	10	40	0.4	36.4		9.5		15.9	42.4		8.0		32.8	28.4	A	9.4		36.0	8.6	
9.3	29	23.9	48.3	8.5		19.8	31.7	A	8.7		54.6	20.3	B	9.8		40.6	18.4		9.4		38.6	16.0	
9.8		24.8	35.4	9.4	41	18.7	17.7		9.2	53	4.0	14.3		9.8		45.5	55.8		8.9	15	5.2	23.1	A
8.2		31.8	2.4	A	9.5		40.1	3.4		8.7		5.4	35.3	A	9.8		58.4	49.3		9.1		22.9	45.8	A
9.5		50.0	11.4	9.1		44.6	51.5		9.5		15.3	0.2		9.1	4	21.2	21.9	A	10		43.7	51.4	
9.5		55.9	7.6	8.2		54.1	4.5	A	9.5		24.0	48.4		8.5		26.7	19.1	A	9.1		51.7	46.8	A
9.9	30	6.6	19.0	9.8	42	6.0	48.8		9.3		26.2	57.0	A	9.4		29.3	53.3		9.5		56.3	1.4	
9.9		21.2	1.7	9.4		8.9	30.5		9.9		26.9	52.5		9.1		29.6	21.6	A	9.5	16	54.0	44.1	
9.8		42.1	22.4	8.3		24.1	40.9	A	9.7		38.2	41.9		9.1		34.8	39.3		9.6		57.5	41.4	
8.7		43.8	1.0	A	9.4		25.0	46.0		9.5		41.8	27.8		9.1		37.4	51.0	A	9.2	17	7.4	1.2	
9.2		57.3	36.2	8.5		53.6	8.8	A	9.1		49.2	25.1		9.0		38.7	46.7		8.3		19.2	52.1	A
10	31	4.6	18.1	9.6		55.5	3.7		9.4		54.0	0.8	A	9.4		44.1	11.2		8.1		21.1	6.4	B
10		7.9	20.1	9.6	43	0.8	7.2		10	54	10.7	26.1		9.0		54.9	31.0	A	9.1		40.3	24.1	A
9.6		10.2	42.4	9.4		7.7	18.1		10		24.2	29.0		8.7	5	5.7	49.7	A	9.8	18	12.9	40.4	
10		55.9	40.8	9.4		10.7	22.5		9.4		32.5	35.5		9.7		23.4	6.9		9.6		23.3	50.3	
8.2	32	2.7	42.8	A	9.8		17.0	20.8		9.2		34.3	31.7	A	9.2		25.0	21.5		9.2		33.4	19.9	
8.5		3.1	15.5	A	9.1		19.9	6.7	A	9.4	55	7.2	25.9		9.0		36.3	28.2	A	8.7		34.4	34.3	B
9.8		10.5	7.1	9.2		21.0	46.3		8.0		16.4	38.8	A	9.7		48.0	3.5		9.5		47.8	14.6	
8.3		29.0	11.8	A	9.2		30.1	54.1		8.4	56	0.1	1.6	A	9.5		53.2	53.1		9.8		57.7	24.3	
9.5		37.2	47.1	9.8		38.9	33.5		9.8		21.1	13.0		9.5	6	33.4	6.9		10	19	2.3	39.1	
9.5		53.1	12.6	8.0		41.3	23.5	A	10		50.4	54.5		9.1		52.5	20.2		9.8		2.8	59.1	
9.5	33	3.8	30.1	9.1		45.4	17.7		9.5		52.2	19.8		9.9		58.2	48.9		7.3		34.2	53.6	B
9.1		15.8	38.3	9.1		52.6	8.5	A	9.5	57	0.7	5.8		9.4	7	3.4	37.0		9.1		58.4	30.7	
10		25.2	45.4	9.5	44	5.8	52.3		9.8		7.9	32.9		8.7		8.9	36.8	A	7.8	20	8.0	5.6	A
7.0		31.3	31.6	B	9.2		7.3	45.3		9.0		8.6	51.3		9.1		20.7	55.3	A	9.5		20.1	18.4	
9.3	34	7.1	24.9	9.8		57.3	22.8		9.5		30.8	3.7		9.4		34.7	43.8	A	9.6		21.9	35.0	
7.7		24.7	22.4	B	9.5		57.4	44.2		9.7		45.4	50.0		9.5		43.6	10.6		9.0		45.0	8.2	A
9.0		28.0	9.2	8.5	45	4.0	20.6	A	9.3		46.4	51.8		9.3		51.3	57.8	A	9.2		49.0	49.9	
9.5		48.5	38.5	4.3		5.6	53.9	A	9.0		54.6	37.1		9.8		52.2	26.8		9.8		51.0	8.4	
9.7		58.6	54.4	9.6		20.9	53.9		9.4		55.5	11.7		9.3	8	1.3	41.1		7.7		58.2	19.8	B
9.3	35	6.1	30.4	8.6		24.5	52.4	A	9.8	58	19.9	41.8		9.8		3.8	56.3		9.5	21	0.4	37.0	
9.8		17.5	7.4	9.1		50.4	13.1		9.2		25.4	44.2		9.1		18.9	17.4		9.5		9.0	7.0	
9.3		19.6	14.3	9.5	46	7.4	36.2		9.0		29.0	53.9		9.4		19.0	9.5		8.9		14.8	51.1	
10		58.7	22.9	9.4		9.5	38.1		9.2		31.2	6.4		6.3		54.1	13.5	B	8.9		22.7	21.5	A
9.4		58.9	34.8	8.8		24.4	50.1	A	9.0		46.8	57.9		9.5	9	1.4	49.1		8.7		26.6	17.2	A
9.4	36	11.1	12.2	9.2		32.2	12.7		9.5	59	10.3	59.5		9.5		25.9	50.6		10		29.4	48.7	
8.5		19.6	13.5	A	9.2		42.3	44.9		8.8		11.6	16.5	A	8.2		27.0	9.2	A	9.6		32.4	34.7	
9.3		27.9	36.3	9.5		44.1	12.1		9.8		17.1	10.8		9.8		31.7	54.9		9.8		40.6	47.2	

1401—1460				1461—1520				1521—1580				1581—1640				1641—1700			
	6h	−20°			6h	−20°			6h	−20°			6h	−20°			6h	−20°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	21 48.5	14.8		9.2	30 30.5	44.1		9.6	38 26.8	1.0		9.4	41 19.8	37.9		9.0	51 17.2	46.9	
9.9	22 6.1	48.5	A	9.2	31.2	15.9	A	8.6	28.0	18.4	A	9.1	32.5	11.3		8.0	19.6	51.5	B
9.3	8.0	0.9		9.5	37.1	14.8		9.9	30.2	25.4		9.4	52.4	26.7		9.4	24.6	18.0	
8.3	24.7	6.1	A	9.2	47.8	23.0		9.8	52.1	38.6		9.4	42 5.3	58.0		9.5	37.8	1.2	
9.3	28.9	3.9		10	48.4	49.0		9.7	52.4	31.7		9.3	23.7	53.5		9.2	46.6	46.6	
9.5	23 1.2	58.0		9.1	55.4	26.8	A	9.1	54.1	19.9	A	9.8	25.0	35.3		9.5	56.9	35.2	
9.4	7.0	12.2		9.2	31 2.3	56.0		9.8	54.1	16.5		9.1	29.8	57.5		9.5	57.2	23.0	
9.5	27.1	16.7		9.5	4.3	53.6		9.7	54.5	45.2		9.3	33.2	14.8		9.4	52 1.3	3.3	
8.3	37.9	8.3	A	9.0	5.2	19.5	A	9.7	39 1.8	48.7		9.0	35.1	16.1	A	9.6	7.2	54.4	
9.5	50.2	58.4	A	9.2	10.4	27.9	A	9.8	3.5	38.6		9.1	47.9	30.4		8.8	7.8	20.0	A
9.8	51.8	45.1		9.8	32.6	6.6		9.6	3.6	25.0		9.8	54.8	0.3		9.9	8.9	57.9	
9.4	58.7	25.7	A	9.6	36.0	9.1		9.5	5.1	22.4		10	43 7.8	46.3		9.7	17.6	51.0	
9.7	24 0.9	34.4		9.5	40.3	58.3		9.1	10.3	16.8	A	9.4	10.6	9.6		9.7	18.9	44.0	
9.5	9.8	32.6		9.4	32 3.8	20.3		8.9	12.5	49.2		9.0	38.2	17.6	A	8.3	28.7	25.8	A
9.0	11.3	43.1		9.5	12.4	59.8		8.6	14.7	41.3	B	9.5	39.1	25.0		9.4	49.3	28.7	
8.2	25 8.0	31.6	A	9.9	25.3	58.5		10	14.9	46.8		8.8	40.3	55.5		10	50.5	48.0	
9.4	10.2	23.9		9.8	42.6	11.6		9.8	18.4	27.3		9.5	41.0	38.4		8.5	52.4	35.9	A
9.4	15.7	33.8		9.8	49.5	39.3		8.8	20.3	4.4		9.5	44 7.5	10.3		9.5	52.7	27.2	
8.7	17.2	37.9	A	9.2	49.8	23.8		9.9	20.7	50.8		9.0	16.8	11.7	A	9.6	54.4	24.5	
9.6	20.1	18.5		9.5	33 1.9	29.4		9.2	21.0	28.0		9.8	22.2	49.4		8.5	53 1.7	58.5	B
9.1	24.1	30.3	A	9.2	1.9	59.0		9.8	22.0	16.2		9.0	29.7	46.1		9.3	7.4	57.1	
8.0	26.7	57.9	A	9.3	7.6	9.0		9.3	22.0	34.7		7.6	31.4	40.3	B	9.5	23.3	6.6	
9.7	27.7	12.4		9.0	19.0	30.9		8.8	22.1	32.1		7.5	39.0	44.7	B	9.1	23.9	35.9	A
9.4	40.6	1.8		9.1	35.1	34.0	A	9.2	22.9	22.1		9.7	45 3.1	47.4		9.5	27.1	40.4	
9.0	45.6	11.2	A	9.5	35.6	8.4		9.0	23.9	40.3	B	9.6	4.3	6.8		9.8	32.2	21.8	
9.5	47.0	21.3		9.4	46.7	43.5		8.3	26.7	32.5		9.5	4.9	31.1		9.0	49.7	24.6	
9.0	47.2	57.8	A	10	54.4	57.8		9.4	27.0	9.4		9.4	16.5	6.3		9.4	54 5.1	55.5	
9.4	52.8	31.0	A	9.5	57.8	53.8		9.0	28.4	32.4		9.5	22.8	58.5		9.5	7.6	14.7	
9.8	53.9	43.4		9.5	34 1.0	33.2		7.8	29.6	42.2	B	9.4	27.4	57.6		9.5	11.1	47.7	
9.5	54.2	27.0		8.5	13.1	55.5	A	9.4	30.0	29.7		9.8	38.2	52.7		7.5	20.2	26.4	A
9.5	26 12.6	41.8		10	23.3	51.5		8.4	31.8	54.8	B	10	57.7	50.0		8.2	25.4	28.5	A
7.2	21.0	54.8	B	9.2	25.2	42.3		8.9	36.1	42.7	B	9.5	46 6.0	35.7		9.1	33.4	34.5	
9.7	36.2	57.6		9.7	44.7	43.2		9.4	39.0	32.4		9.5	9.0	9.2		9.1	35.9	57.0	
9.6	43.7	14.4		8.7	35 10.7	43.0		9.5	40.5	34.3		8.8	19.5	40.2		9.4	46.0	12.5	
9.6	27 8.3	2.7		6.8	14.1	10.6	A	7.6	44.0	37.7	B	9.8	45.3	21.7		9.0	55 0.7	22.0	A
9.7	8.4	4.9		9.0	25.4	26.7		9.5	49.8	34.3		5.4	47 16.3	2.7	B	9.8	3.5	16.2	
6.6	13.9	48.9	A	9.5	28.0	7.3		8.3	50.5	27.1	B	9.2	20.7	19.6		9.5	13.2	21.7	
8.1	17.9	2.1	A	7.3	41.0	6.4	A	9.7	51.4	38.2	B	9.5	40.5	16.2		9.5	27.4	10.8	
8.7	22.3	53.6	A	9.0	44.9	25.8		9.8	53.1	33.2		9.7	43.8	39.7		9.8	27.7	52.4	
9.5	39.7	14.7		9.4	48.6	7.5		8.1	53.7	36.1	A	9.5	48 6.6	17.1		9.8	28.0	4.3	
8.8	28 2.1	2.0	A	9.5	50.6	31.6		9.4	59.2	45.3		9.8	10.8	28.7		9.8	30.6	25.5	
9.6	2.8	19.4		8.8	50.1	58.8	A	8.8	40 1.9	39.4		9.8	27.5	16.1		9.0	32.4	45.2	
9.5	12.4	31.0		9.1	36 8.0	43.3		9.0	2.5	36.5	A	9.2	46.8	29.5		10	33.7	21.2	
9.5	25.7	19.2		9.8	13.4	40.4		9.4	9.3	40.8		6.8	47.3	13.6	B	9.5	42.0	39.0	
9.4	26.2	5.8		9.2	15.4	37.2		9.4	11.2	31.7		9.1	48.0	14.2	B	9.5	58.4	7.7	
7.0	31.4	26.7	B	9.0	16.9	26.1		9.7	12.4	30.4		9.2	57.5	46.8		9.2	56 18.3	27.6	
9.0	34.7	40.3		9.5	18.8	34.9		9.7	13.2	47.4		9.4	49 48.4	32.7		9.0	23.6	54.0	
9.2	49.1	3.9	A	8.7	46.4	0.8	A	8.2	19.8	39.6	B	9.2	50 1.9	11.5		9.2	24.1	46.6	
8.0	29 0.4	17.0	A	8.7	53.3	18.4	A	9.0	20.7	25.4		9.5	4.2	28.7		9.2	32.9	7.1	A
9.5	2.4	0.4		9.1	58.8	19.7	A	9.3	20.9	33.5		9.5	4.8	18.2		9.5	44.5	49.2	
9.1	5.6	41.2		10	37 3.6	45.9		9.8	34.7	31.4		9.5	27.5	8.4		8.7	48.8	32.5	B
9.2	35.1	39.4		9.4	4.8	53.5		9.8	35.8	38.7		10	37.2	7.2		10	57 2.1	43.5	
9.5	42.0	8.5		9.5	11.3	22.7		9.8	42.0	29.9		9.5	38.6	57.7		9.1	6.4	27.1	A
9.5	43.1	22.6		9.3	33.0	35.5		9.9	48.8	44.2		8.2	42.6	54.7	B	9.1	20.0	52.5	
9.2	30 10.8	20.7	A	9.1	41.2	14.7		8.4	48.8	31.1	A	9.8	43.3	49.5		9.1	21.3	54.7	
9.8	18.1	11.9		9.4	38 3.9	53.1		6.0	49.1	51.7	L	10	47.7	7.5		9.4	23.5	32.9	
9.0	19.5	6.3		9.3	5.5	37.2		8.1	53.2	56.9	B	9.3	50.2	10.5		9.5	23.6	28.3	
9.5	20.7	1.2		9.4	8.9	25.4		9.1	59.6	10.4		9.6	57.1	58.8		9.0	28.4	12.8	A
9.7	25.2	59.4		9.4	23.3	57.4		8.8	41 6.5	8.8		9.8	51 5.5	46.0		9.1	39.3	29.3	A
9.8	26.9	31.7		8.9	24.4	15.8	A	9.8	18.9	26.7		9.3	10.0	15.9		9.6	43.9	46.3	

1701—1760

m	6h—7h m s	—20° ′	
9.8	58 5.4	59.6	
9.8	13.1	54.8	
9.7	24.3	18.8	
9.5	37.0	18.8	
9.3	37.6	59.5	
7.3	38.8	36.6	B
8.8	42.7	50.6	
9.5	45.8	35.1	
8.5	52.2	30.0	A
9.7	59 3.1	0.8	
9.0	8.9	11.8	
10	13.8	45.0	
9.8	15.4	42.8	
8.7	26.8	34.5	A
9.5	30.0	43.8	
10	32.7	48.5	
10	33.1	58.0	
9.8	46.0	54.9	
9.8	0 1.2	50.9	
8.9	4.1	47.8	A
9.8	24.1	29.6	
9.5	37.5	12.8	
9.5	50.2	4.9	
9.8	50.6	46.4	
9.2	51.6	10.4	
10	57.5	39.1	
8.4	59.9	4.1	
10	1 4.1	34.1	
10	5.1	35.6	
9.5	7.6	41.4	
9.8	8.7	21.8	
9.4	11.3	40.1	
9.4	14.9	32.9	
9.8	19.3	39.9	
9.4	19.3	46.0	
10	38.2	32.4	
9.5	45.9	8.1	
9.3	50.4	19.1	
9.1	55.1	31.2	
7.0	2 6.6	37.9	B
9.8	13.0	29.4	
9.6	20.9	4.4	
9.5	21.8	52.7	
9.8	26.1	33.0	
9.0	27.3	44.5	
9.1	38.3	16.5	
9.7	38.6	9.6	
9.8	59.5	25.6	
8.7	3 4.8	36.9	A
9.7	5.6	47.7	
9.8	25.8	17.0	
9.1	30.7	25.8	A
9.6	36.9	10.5	
8.8	38.5	26.9	A
10	43.7	57.4	
9.5	47.0	19.2	
9.4	57.6	54.8	
7.8	4 12.7	2.4	B
9.3	36.3	6.4	
9.7	38.9	52.9	

1761—1820

m	7h m s	—20° ′	
9.0	4 46.7	3.1	A
9.6	48.9	2.5	
9.9	5 1.7	2.5	
10	3.6	46.0	
9.9	8.6	26.7	
9.6	9.9	33.0	
6.2	26.1	38.7	B
9.8	35.2	56.4	
9.7	41.7	9.3	
8.9	48.3	9.9	
10	48.6	44.0	
9.7	50.0	24.9	
9.8	54.8	45.0	
9.7	6 2.0	13.1	
9.0	4.9	22.2	A
9.5	7.3	9.7	
9.4	10.5	5.5	
9.0	13.7	24.0	A
9.0	15.6	49.3	
8.8	22.5	36.8	
9.2	37.8	46.3	
8.2	52.9	20.5	A
9.3	55.5	37.9	
9.7	7 7.3	45.2	
9.0	13.0	29.4	A
8.4	14.5	52.9	A
9.5	15.2	45.9	
9.6	22.0	21.4	
9.3	28.2	12.5	
9.3	31.8	11.3	
9.1	38.3	54.1	A
9.0	39.5	16.9	
9.4	39.8	8.0	
10	51.4	19.8	
8.9	57.7	51.8	A
8.5	8 7.3	40.3	A
9.7	8.9	0.3	
8.9	11.3	51.6	A
9.3	17.1	53.8	
9.4	17.7	46.0	
8.9	25.2	49.7	A
9.1	32.0	12.3	
9.5	32.9	35.9	
8.2	33.1	46.4	A
9.5	41.4	22.3	
9.1	55.7	6.0	
9.8	9 2.5	30.4	
10	4.8	31.2	
8.9	5.5	43.5	A
9.8	7.2	37.1	
10	23.3	59.1	
10	23.3	37.1	
9.8	29.4	49.5	
9.2	33.6	5.9	
9.8	35.2	16.3	
9.1	40.2	19.1	A
9.2	43.1	6.3	
9.5	43.5	57.0	
9.2	58.5	9.0	A
9.2	58.9	55.7	A

1821—1880

m	7h m s	—20° ′	
10	10 2.4	22.0	
9.2	8.3	55.6	A
9.8	19.8	15.0	
9.3	27.3	41.8	A
9.8	28.1	37.1	
9.4	40.0	58.8	
9.6	41.5	57.5	
9.4	49.1	8.1	
9.5	50.1	58.5	
7.3	50.1	55.7	B
9.5	59.9	18.4	
8.7	11 9.1	12.4	
8.3	9.6	56.3	A
9.4	13.2	48.5	
9.8	17.7	2.5	
9.4	21.8	11.6	
8.7	25.1	37.9	A
10	39.3	9.1	
9.4	43.2	13.5	
9.7	46.2	40.0	
9.5	53.5	38.5	
9.4	55.9	21.2	
9.2	59.4	50.1	A
9.7	12 1.9	25.2	
8.9	3.8	37.4	A
9.1	4.7	55.1	A
8.7	6.5	20.4	A
9.7	17.6	12.2	
10	35.8	39.2	
9.0	49.9	22.0	
8.9	52.9	23.8	A
9.5	57.6	2.0	
10	13 15.6	59.9	
9.7	35.9	37.7	
10	36.2	51.7	
9.9	37.8	6.5	
7.4	47.5	26.0	A
9.1	48.7	12.9	
9.0	50.9	28.3	A
9.3	51.4	52.8	
9.8	55.0	52.3	
10	14 7.1	46.8	
9.7	11.0	47.1	
9.7	14.8	31.2	
9.3	17.8	13.4	
9.2	20.5	57.4	A
10	30.7	50.5	
9.3	34.5	42.9	
7.8	37.2	22.7	A
9.2	44.7	41.9	
9.8	51.4	23.3	
9.7	53.7	27.6	
9.7	57.5	52.2	
9.2	57.9	30.1	A
9.2	58.8	2.2	
9.5	15 2.8	42.5	
9.8	12.7	49.8	
9.8	20.2	9.7	
8.8	25.6	15.6	A
9.7	26.2	29.7	

1881—1940

m	7h m s	—20° ′	
8.9	15 28.8	8.1	A
9.8	37.3	35.4	
9.8	42.8	48.7	
9.8	46.8	48.6	
9.5	49.1	0.3	
9.5	53.0	0.5	
10	16 1.9	31.3	
9.1	4.0	17.0	
7.8	6.1	13.7	A
9.2	10.8	34.5	
9.2	19.7	38.4	
8.8	22.3	55.0	
9.4	25.9	53.1	
9.2	33.6	28.4	A
9.4	34.0	0.4	
9.4	36.5	36.3	
9.8	41.6	53.0	
10	53.5	35.1	
8.9	54.6	31.2	A
9.5	17 4.3	36.1	
8.7	9.8	24.7	A
9.2	27.8	31.5	
8.5	36.2	25.7	A
9.9	49.8	16.3	
9.8	57.4	21.5	
9.1	18 8.8	49.7	
9.8	13.7	7.0	
9.4	15.2	19.5	
9.5	15.5	40.2	
10	20.3	2.3	
9.3	24.6	30.4	A
9.3	25.8	25.7	A
9.4	27.4	39.0	
9.4	33.3	39.1	
8.7	44.4	44.4	
8.5	46.2	52.9	A
9.1	47.0	4.8	
9.4	49.1	43.9	
7.3	52.1	53.4	A
8.5	56.1	44.3	A
9.8	19 1.8	22.5	
9.3	9.8	8.2	
9.7	11.4	19.1	
9.5	13.0	3.1	
9.8	14.5	54.1	
10	17.9	28.1	
9.7	18.6	7.7	
9.8	19.3	45.5	
9.5	28.7	3.5	
9.3	30.3	36.8	
8.0	31.4	40.4	A
9.5	33.1	48.7	
9.3	36.3	36.3	
9.5	40.0	59.3	
8.2	53.3	6.8	
7.3	55.8	37.1	A
9.4	20 0.6	36.4	
9.7	6.2	26.4	
9.5	7.3	48.2	
9.2	9.9	14.3	

1941—2000

m	7h m s	—20° ′	
9.3	20 11.9	42.4	
9.1	14.0	0.3	
9.9	24.2	26.4	
9.4	28.7	19.3	
9.5	30.5	37.8	
9.4	42.0	36.9	A
10	49.6	6.7	
9.5	57.1	20.0	
9.5	21 8.8	29.7	
9.1	9.8	29.7	A
7.8	17.9	51.5	A
9.5	28.0	37.2	
9.0	35.9	12.3	
9.8	42.0	14.7	
8.8	49.7	54.5	A
9.6	57.4	46.7	
9.5	22 0.8	52.4	
9.3	14.7	52.3	A
9.8	17.3	57.7	
10	17.4	36.1	
8.9	23.4	21.2	
9.4	28.5	30.8	
9.7	40.4	58.6	
9.5	40.8	0.5	
9.2	41.7	20.5	
9.1	45.2	34.7	
10	59.3	21.0	
9.1	23 8.3	43.1	
9.1	9.3	0.9	A
9.6	16.4	32.1	
8.8	39.0	30.2	
9.8	39.4	15.9	
9.7	48.3	11.0	
10	49.2	20.4	
9.5	54.6	12.4	
10	58.3	47.1	
9.6	59.8	26.1	
9.5	24 7.7	49.7	
9.5	8.3	57.3	
7.7	9.8	30.6	WC
9.8	12.4	14.9	
9.3	22.1	10.4	
9.2	23.4	1.2	
9.5	28.9	38.4	
9.1	31.6	42.6	
10	35.4	39.7	
9.8	39.3	23.9	
9.4	48.4	13.0	
9.4	58.7	26.5	
9.8	25 2.9	52.7	
9.0	3.9	55.9	
9.4	5.1	26.6	
10	12.7	35.2	
9.6	13.3	40.2	
9.5	16.3	40.8	
9.3	16.5	51.4	
9.8	19.5	11.1	
9.6	25.3	53.0	
8.0	33.6	37.4	B
9.4	43.9	59.8	

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	7h	−20°			7h	−20°			7h	−20°			7h	−20°			7h	−20°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	25 44.7	26.0		9.8	30 6.7	21.5		9.8	35 20.8	46.8		7.2	40 25.7	28.5	A	9.3	45 54.9	11.5	
9.6	45.0	49.1		9.3	34.6	56.3		10	27.3	52.5		9.8	36.6	9.5		9.2	58.0	6.1	
8.3	48.6	14.4	B	8.8	36.4	35.9		10	30.7	58.2		9.3	39.8	48.2	A	9.4	46 3.3	14.9	
10	26 14.4	43.3		9.3	37.6	56.3		9.7	31.8	47.4		9.3	46.1	29.2		9.8	4.8	28.1	
9.7	16.5	42.5		8.6	39.7	43.9	A	9.8	37.3	47.7		9.2	46.6	58.1	A	9.3	6.2	12.6	
9.9	20.1	27.3		9.0	40.4	35.1		9.8	41.9	8.1		8.9	58.0	22.8	A	9.2	7.1	24.9	
10	20.9	21.4		9.0	46.5	15.1		9.2	52.0	44.6		9.8	58.1	10.9		9.0	8.0	52.7	A
9.4	25.3	7.5		9.8	46.8	13.2		9.2	56.0	14.2		9.8	59.4	5.9		9.4	16.4	5.2	
8.6	28.4	28.8	B	9.5	47.4	10.5		9.7	36 6.3	13.1		10	41 4.3	41.7		9.8	32.9	57.1	
9.3	29.5	10.9		10	53.1	7.4		9.7	13.1	1.3		9.2	5.5	32.8		9.8	35.4	5.0	
8.6	30.0	36.1	A	10	56.4	3.6		9.1	17.3	21.2		8.5	8.2	25.9	A	8.7	35.5	37.8	
9.3	30.9	11.7		9.0	59.8	17.2		9.3	18.5	22.2		9.7	8.6	22.5		9.1	40.7	10.5	
9.4	41.3	36.8		9.8	31 17.8	13.9		8.5	27.2	7.6	A	10	22.7	50.7		9.2	40.9	41.5	
9.3	46.4	24.7		9.5	21.9	1.2		8.9	28.7	16.9	A	9.3	29.3	30.9		9.1	44.8	59.3	A
8.7	52.7	23.8	B	9.8	27.0	21.7		9.8	36.2	36.7		9.3	42.4	59.1	A	9.8	58.1	50.3	
9.4	52.8	19.8		9.8	46.7	36.0		9.2	38.3	49.8		9.8	46.5	47.3		9.4	47 2.9	12.6	
9.1	59.2	1.8		9.4	52.6	25.3		9.8	41.8	35.8		9.2	56.2	16.3		9.4	12.8	35.2	
9.8	27 3.9	57.7		9.7	32 2.2	52.6		9.7	55.2	22.0		9.7	56.2	38.6		9.2	16.6	33.0	
9.4	6.7	58.7		9.8	3.4	38.2		9.6	55.6	29.4		9.5	59.5	44.9		9.4	16.9	1.6	
9.7	12.0	49.9		9.3	5.8	26.9		9.7	56.6	44.1		9.8	42 2.1	37.4		8.2	36.8	39.6	A
9.4	15.4	26.1		9.9	13.7	31.9		9.8	37 7.1	41.3		9.9	8.2	34.5		9.3	39.3	30.3	A
9.8	18.3	43.4		9.6	19.0	47.5		9.1	8.4	30.0	A	9.2	10.8	38.3	A	9.7	42.4	58.5	
9.7	20.2	9.8		9.8	20.6	33.6		9.5	11.7	19.1		9.5	23.1	44.4		9.4	45.7	13.2	
9.6	29.6	18.1		8.9	36.8	22.7		9.7	12.5	9.2		9.9	29.7	10.5		9.5	48 13.1	31.6	
9.2	35.4	30.2		9.8	37.0	11.8		8.0	18.0	56.2	B	9.7	34.6	19.0		9.2	14.2	7.4	
9.2	38.5	40.0		9.7	52.3	37.3		9.3	22.9	29.8	A	9.9	43.6	32.3		9.2	18.3	22.4	A
9.1	47.4	24.3		9.0	53.2	1.8	A	9.8	26.8	7.6		9.6	54.2	13.4		9.5	25.1	57.6	
9.5	51.2	4.6		9.8	33 3.6	52.8		9.7	40.9	45.0		9.6	56.1	12.8		9.8	26.7	30.3	
9.3	53.2	34.4		9.4	4.5	18.7		8.6	42.9	41.6	A	10	43 0.4	18.0		9.8	32.0	54.8	
9.2	58.5	44.0		9.1	7.4	20.6		9.8	46.2	18.0		9.5	1.3	32.3		9.4	33.6	5.0	
10	28 1.9	55.4		9.5	8.0	12.5		10	52.1	36.0		7.9	12.8	55.0	A	9.4	36.1	7.4	
9.8	7.5	11.5		9.7	15.2	52.4		9.1	38 13.9	39.8	A	9.2	14.3	1.6		9.5	41.3	1.7	
8.8	11.2	41.6	A	10	19.0	52.5		8.9	20.5	7.3		10	20.6	56.3	A	9.8	47.8	32.8	
9.5	13.4	6.1		9.9	22.0	53.0		9.9	23.3	50.0		9.5	26.7	11.1		9.5	50.9	0.7	
9.8	15.3	17.1		9.6	31.8	4.8		9.8	30.6	1.6		9.5	27.0	8.2		9.5	49 0.7	57.9	
8.8	15.9	7.6		9.7	34.1	56.1		8.7	34.4	42.6	A	9.4	31.1	7.1		9.1	2.8	50.4	
7.7	18.0	59.6	A	9.2	35.4	24.6		9.2	38.6	21.7		9.3	45.0	41.7		9.2	24.6	15.7	A
9.1	21.2	44.6		8.8	44.1	29.0		9.8	38.7	2.5		8.9	48.5	28.6	A	9.2	27.7	49.5	
8.7	26.5	40.3	A	9.6	49.2	54.0		8.5	52.7	28.0		9.2	49.7	58.2		9.3	28.0	23.5	A
9.3	28.1	30.5		9.1	49.4	57.8		10	39 2.2	50.0		9.2	44 2.7	23.4		9.3	36.1	23.3	
9.2	44.1	20.4		9.2	58.4	57.9		9.8	12.0	28.4		9.7	28.8	19.1		9.5	44.9	7.0	
9.4	44.5	2.6		9.3	34 0.2	13.8		9.9	12.2	44.6		9.7	29.0	5.0		9.5	50.5	37.0	
9.8	51.3	52.2		9.8	0.3	37.9		9.8	22.2	2.5		10	33.2	51.8		9.8	50.9	28.3	
9.3	54.4	32.6		8.8	9.8	41.5		10	24.7	50.0		9.5	44.0	17.9		7.1	59.1	4.7	A
9.7	55.5	39.2		9.1	13.6	24.8		10	26.1	42.2		9.6	52.2	58.3		9.3	50 8.1	36.3	
9.5	59.1	33.4		8.8	15.1	25.4		8.5	33.8	17.3	A	9.4	52.9	51.4		9.7	9.0	24.1	
10	29 0.7	25.8		8.8	10.2	53.9	B	8.5	34.8	20.4	A	9.1	59.6	34.0		9.2	10.2	28.2	
8.5	8.5	11.1	A	9.4	22.7	18.2		9.3	35.5	52.0	A	9.2	45 5.0	45.4	A	8.3	15.3	41.0	A
9.5	13.8	57.3		8.2	27.3	37.3		9.8	37.7	37.1		9.8	9.8	41.8		9.8	20.8	5.4	
9.5	13.9	2.8		9.5	31.9	52.6		10	39.9	3.4		9.5	12.7	56.8		9.7	24.2	2.7	
8.9	16.5	13.0	A	9.4	35.4	57.0		10	43.2	24.8		9.6	14.2	58.6		10	33.5	29.5	
9.3	22.3	5.7		8.7	39.5	1.6	A	8.5	46.8	24.6	A	10	21.5	46.5		9.6	35.2	40.1	
9.5	38.7	46.1		10	46.8	40.9		8.9	49.9	52.4	A	9.2	22.1	7.9		9.8	37.5	46.8	
9.8	39.8	22.6		7.8	51.9	55.1	B	10	50.6	17.6		9.1	24.0	50.7	A	9.5	48.0	31.2	
10	43.8	22.1		10	53.8	46.2		9.6	52.1	30.4		5.6	24.0	48.2	A	9.4	49.2	20.1	
9.8	47.7	35.2		9.0	56.6	1.6		9.7	59.8	11.2		7.4	28.0	20.9	B	9.4	59.9	49.5	
9.8	50.9	16.9		8.7	35 9.7	23.0		9.5	40 5.1	26.2		9.5	33.8	38.5		9.4	51 15.6	0.1	
8.8	52.9	55.2		9.3	11.3	9.4		9.7	18.1	6.4		8.8	36.3	55.2	A	9.4	20.0	0.1	
10	58.4	17.7		8.7	14.4	54.6	B	9.8	21.9	2.6		9.8	43.2	53.0		9.7	24.5	46.2	
10	59.7	15.9		9.8	19.7	24.0		10	23.7	45.9		9.8	49.1	47.1		9.0	27.7	7.7	A

2054, 2055: Hauptsterne des Cumulus GC 1550

2301—2360				2361—2420				2421—2480				2481—2540				2541—2600			
	7h	—20°			7h—8h	—20°			8h	—20°			8h	—20°			8h	—20°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.2	51 30.9	22.0		9.3	57 33.4	34.7		9.5	4 32.5	20.7		9.1	12 23.2	21.7	A	9.5	21 30.6	42.8	
7.7	31.8	2.2	B	9.3	34.0	29.7		9.2	37.9	19.8		9.4	33.8	4.1		9.8	31.0	53.8	
9.7	38.1	37.1		9.4	40.8	25.9		9.8	41.5	5.0		9.8	37.9	30.2		9.5	32.5	39.0	
9.6	42.8	37.9		9.8	43.2	10.8		9.5	45.6	41.7		9.8	52.4	6.8		9.1	38.4	26.9	
8.5	52.8	12.7	A	7.3	44.2	57.9	A	9.4	53.2	46.7	A	9.8	54.3	45.0		9.5	48.1	20.2	
9.3	52 4.0	0.7		9.4	46.3	19.2		9.5	5 2.3	17.1		9.5	13 1.7	42.7		9.3	53.3	33.3	
9.4	6.6	25.2	A	9.8	52.6	50.8		9.9	3.5	55.5		9.5	6.8	25.3		9.3	22 24.0	28.0	
10	15.4	50.7		9.1	55.3	55.9	A	10	15.8	42.8		8.0	8.6	47.7	B	9.3	26.6	24.4	
9.5	18.2	0.5		9.1	58 18.5	51.7	A	9.4	18.3	47.1	A	9.2	23.8	24.2	A	6.7	27.4	28.1	
9.5	21.1	49.0		9.3	28.8	51.1	A	9.5	31.1	56.8		9.4	30.0	8.6		9.0	28.2	8.6	
9.8	22.9	24.6		9.5	36.0	14.8		9.4	32.4	58.2		9.1	41.7	49.5		9.8	39.6	25.6	
10	24.6	13.4		9.5	48.1	7.6		9.0	37.6	10.5	A	9.8	14 0.3	59.8		9.4	49.3	7.7	
9.3	29.5	57.5		9.8	48.9	58.5		9.4	42.3	17.4		9.3	2.4	9.0		9.0	50.5	33.7	
9.8	31.0	26.7		9.8	53.8	22.4		9.2	44.3	15.9	A	9.8	16.7	57.0		9.5	55.4	56.4	
9.8	35.9	40.0		8.7	56.2	30.2	A	10	6 1.6	28.1		9.2	43.7	45.5		9.5	57.1	2.9	
8.9	39.7	51.5		9.8	59 9.2	19.1		9.3	2.1	3.8		9.5	15 1.0	12.2		9.0	23 3.9	38.8	
9.0	41.9	42.5	A	9.3	21.9	38.9		8.9	9.7	36.5	A	9.5	3.6	37.3		8.0	6.8	47.7	
9.8	42.2	4.0		9.8	23.3	24.1		9.5	13.5	3.4		9.5	4.0	59.3		9.5	26.7	5.9	
9.2	53 2.0	41.1	A	10	23.7	15.1		8.8	13.7	36.1	A	7.2	5.1	20.0		9.2	36.1	18.7	
9.5	3.6	17.7		8.2	32.5	32.5	A	9.3	15.8	14.0		8.0	17.5	13.7		9.5	36.9	40.4	
9.7	7.6	30.2		9.8	38.9	35.3		9.5	33.2	51.5		9.5	32.9	32.9		9.6	42.3	57.9	
9.6	9.0	10.9		8.7	42.6	6.4	A	9.3	46.3	22.8		9.2	41.0	5.0		8.2	44.9	24.4	
9.8	23.8	30.7		9.8	47.8	55.7		8.1	48.8	48.4	A	9.5	45.8	28.4		10	47.6	53.2	
8.7	25.7	3.4	B	9.3	49.1	27.0		9.7	53.8	59.5		8.5	48.9	54.5		9.3	54.6	17.0	
9.8	29.0	40.8		9.0	54.9	12.1	A	9.7	7 0.7	56.7		9.8	49.5	44.5		9.7	55.2	32.1	
9.6	30.0	36.1		9.0	0 13.2	58.0		8.7	5.6	8.5	B	9.0	52.6	22.2	A	9.4	58.1	5.5	
9.2	33.3	40.0		8.7	17.2	7.2	A	9.1	14.5	48.0	A	8.5	57.4	33.0	A	8.5	24 1.0	23.5	
8.2	41.6	56.2		9.8	21.1	22.5		9.7	16.9	48.3		9.8	16 27.0	49.7		8.6	10.1	42.4	
9.1	47.9	28.4	A	9.6	31.2	24.3		8.7	36.2	56.4	A	9.4	29.7	59.3		9.3	17.8	16.8	
9.7	54 2.4	41.5		9.8	34.9	42.5		9.4	41.9	21.7		8.6	30.5	18.0		9.4	33.2	31.4	
9.7	11.0	13.5		9.3	42.3	52.6		9.0	42.2	57.0	A	8.9	17 14.5	41.4	A	9.5	37.4	43.6	
9.8	12.8	10.5		9.4	47.8	51.9		9.1	8 10.0	41.9		8.9	15.6	36.1	A	9.2	42.3	42.9	
9.2	15.7	59.4		9.6	47.9	8.2		9.5	37.1	22.5		9.5	24.2	45.4		9.8	25 3.6	47.0	
9.7	21.3	34.3		9.3	49.8	23.0		8.5	43.1	54.1	A	9.5	24.9	12.2		7.0	6.5	35.6	
9.7	33.6	33.4		5.8	54.2	7.9	A	9.5	44.3	49.1		9.0	30.3	44.2	A	9.4	16.1	55.4	
9.3	40.6	3.8		8.9	1 19.9	16.2	A	9.5	47.0	41.3		8.9	30.8	22.5		9.4	17.3	15.2	
9.0	53.1	39.1	A	9.5	29.1	28.8		9.6	9 0.5	18.5		9.0	41.0	49.6	A	9.5	24.5	6.7	
9.5	55 6.0	35.6		9.0	33.0	44.1		9.4	15.2	16.5		9.1	18 2.2	16.4		9.8	29.8	44.1	
10	6.9	50.7		9.5	52.8	6.6		9.8	25.3	40.5		9.5	18.9	31.9		9.0	32.9	19.0	
8.7	11.6	58.1		9.6	55.4	16.5		9.2	30.3	5.9		8.5	38.2	59.9	A	9.2	39.8	49.8	
9.5	12.3	6.7		9.1	2 2.2	6.2	A	9.7	33.3	43.1		8.7	51.5	16.7	A	9.0	40.6	33.9	
9.4	19.2	2.7		9.0	14.4	15.2		9.2	43.0	40.8		5.8	53.4	34.5	B	9.5	45.0	36.3	
7.8	23.3	45.7	A	9.1	30.5	18.5		10	58.4	48.3		9.4	59.1	56.7		9.3	46.6	15.1	
8.5	30.7	5.5		9.7	32.3	56.3		9.7	10 3.7	48.6		9.5	19 35.8	12.9		9.0	26 2.1	5.7	
8.4	35.6	27.6	A	8.2	38.4	4.6	A	9.8	11.9	2.3		9.2	44.9	46.8		9.0	4.4	49.9	
9.1	51.3	14.6		9.7	47.4	34.0		8.3	12.6	34.6	A	9.7	46.6	26.9		9.3	41.3	17.8	
9.1	53.4	19.2		9.1	48.5	41.6		6.6	31.0	52.5	A	9.4	50.8	37.9		9.5	47.1	43.2	
9.7	56 1.0	42.9		9.1	49.5	43.5		9.8	35.8	45.0		9.5	52.0	54.2		8.2	27 43.7	16.0	
9.3	2.4	26.7		9.4	53.7	52.2		9.0	38.5	7.1		9.2	20 3.6	43.2	A	9.1	44.8	53.0	
8.8	17.9	26.1		9.3	3 16.6	48.0		9.0	39.7	15.4	A	9.5	8.3	10.4		9.3	48.9	39.6	
8.8	20.1	17.3		9.0	26.8	22.7		9.4	47.9	34.7	A	9.3	9.7	16.7	A	9.9	53.5	35.6	
9.3	23.9	59.8	A	9.4	28.9	12.1		10	54.6	49.7		9.3	20.2	32.3		9.4	57.8	23.4	
8.8	32.2	4.0	A	9.8	34.2	47.4		9.5	59.7	17.7		9.4	27.3	13.8	A	7.9	59.1	42.2	
9.4	32.3	14.3		9.5	47.6	24.5		9.5	11 5.6	48.8		9.3	55.9	8.3	A	9.7	28 0.6	55.6	
9.5	32.5	44.1		9.2	55.8	23.8		9.1	7.9	37.2	A	9.8	56.5	52.9		9.0	7.6	10.9	
9.4	38.6	8.4		9.0	56.1	29.0		9.3	26.0	48.3		9.2	57.6	12.4	A	9.8	8.2	46.8	
9.5	40.1	1.2		9.3	4 3.3	0.2		9.0	31.0	29.0	A	8.5	59.4	30.7	A	9.0	10.5	54.1	
9.2	43.7	42.7	A	9.2	19.3	58.4	A	9.8	54.8	57.8		6.8	21 7.5	21.7	B	8.9	18.8	3.9	
8.3	57 19.1	22.2	B	8.7	20.3	13.9		9.3	57.4	58.2		9.1	13.1	22.8		9.0	22.9	48.3	
9.5	32.8	27.2		9.7	32.4	49.5		8.7	12 18.4	5.6		9.5	21.1	16.8		9.5	23.6	8.2	

2601—2660					2661—2720					2721—2780					2781—2840					2841—2900				
	8h		—20°			8h		—20°			8h		—20°			8h—9h		—20°			9h		—20°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.5	28	25.8	17.5		8.9	37	51.5	18.8		9.3	49	59.7	1.2		7.5	58	16.3	27.2	A	9.6	10	0.7	44.7	
7.5		26.4	57.5	A	9.1		52.9	24.9		9.8	50	9.1	19.2		9.8		23.6	35.5		9.0		17.6	58.8	
9.1		29.8	21.5		9.7	38	3.8	58.0		9.6		12.3	1.2		9.8		24.3	35.0		9.8		32.5	36.8	
9.1		32.9	57.9		9.8		5.6	43.2		9.8		42.2	44.4		10		26.0	31.0		9.0		42.5	37.4	
9.5		34.5	7.8	A	9.3		12.8	54.6		9.5		46.5	19.7		8.8		27.9	32.8	A	7.7		46.2	43.7	B
9.6		55.7	2.5		9.1		26.1	57.0		9.3		52.5	48.1		9.8		37.7	47.1		9.3		47.5	35.4	
9.4	29	13.3	19.7		6.4		26.5	38.3	B	9.0	51	4.5	24.1		9.9		46.9	49.6		9.7		49.5	34.5	
9.0		17.3	43.0		8.5		29.6	8.5		10		37.4	16.1		8.5		56.3	40.3	A	9.8	11	4.0	6.6	
8.2		48.1	33.6	A	9.7		30.7	0.8		9.8		56.3	11.0		9.8	59	11.8	9.0		9.8		9.9	50.9	
9.4	30	1.0	9.5		9.8		41.7	2.8		9.4	52	2.5	55.4		8.0		25.0	57.3	A	9.5		9.9	27.5	
9.6		7.8	47.2		8.7		50.7	12.9		9.3		2.9	3.8		9.8		48.6	16.8		9.4		11.8	25.1	
9.0		14.6	7.9	A	9.0	39	9.7	51.6		9.8		6.1	27.5		8.7		50.5	54.8	A	9.8		12.8	22.6	
9.1		44.4	45.1		9.1		16.8	8.4		9.8		6.8	30.0		9.4		52.8	27.8		8.7		54.6	59.4	A
8.9		54.4	43.0	A	9.6		22.1	44.9		9.5		35.3	58.9		9.3	0	19.9	56.0		9.2	12	3.0	41.0	
9.4	31	7.9	3.9		9.4		25.0	31.7		9.5		35.6	23.9		9.3		26.8	37.6	A	9.3		13.7	13.6	
9.0		32.5	7.1	A	9.3	40	0.9	1.2		9.3		37.0	20.9		9.8		46.4	40.0		8.5		18.1	10.7	A
9.5		51.7	9.1		9.5		4.0	35.0		9.7		38.5	19.7		8.8	1	5.5	44.4	A	9.8		41.3	23.2	
9.5		53.0	12.9		9.5		5.5	8.0		10		39.5	46.1		9.2		34.6	18.8	A	9.3		59.1	7.3	
9.1		54.0	44.7		9.4		17.8	44.3		10		40.2	41.7		9.6		46.2	26.6		9.6	13	4.9	58.3	
9.1	32	1.9	52.1	A	9.3		57.5	8.4	A	9.7		43.8	31.3		9.2		53.3	39.8	A	9.5		10.1	27.6	
9.3		9.1	15.1		9.2		58.7	33.9		9.6	53	7.5	20.5		9.7	2	0.7	20.1		8.8		40.4	44.9	
9.7		14.0	45.1		8.3	41	10.3	15.4	A	10		8.2	14.3		9.6		21.9	49.2		9.8		41.3	5.0	
9.0		20.4	7.8	A	9.6		26.6	1.2		8.3		13.9	15.1	A	7.2		34.1	20.5	A	9.8		54.1	48.7	
9.0		54.3	57.1		10		40.2	14.3		9.4		17.7	52.4		8.9		41.3	55.8		10		58.2	21.9	
9.0	33	0.3	25.0		9.3		41.5	27.2		9.7		20.5	13.8		9.7	3	3.2	30.8		9.9		59.1	39.8	
9.2		5.8	0.1	A	9.8		45.4	46.0		9.1		25.8	54.2		9.7		6.6	6.7		9.9	14	2.7	18.7	
9.5		6.6	51.8		8.9		49.0	48.9	A	10		29.7	14.0		9.8		10.8	11.0		9.9		9.8	26.3	
9.5		16.0	12.9		9.4	42	7.6	13.7	A	8.8		39.9	10.5	A	9.0		21.6	8.1		8.3		17.2	22.1	B
8.3		27.6	53.4	A	9.7		19.9	10.6		10		54.8	6.0		8.2		29.2	49.5	B	9.7		19.7	25.9	
9.4		35.0	44.2		9.1		31.0	42.1	A	9.8		58.9	16.5		9.3		41.7	29.2		10		38.8	51.0	
9.0		44.9	16.5		9.5		42.4	21.9		7.0	54	5.6	38.8	A	9.0	4	5.3	4.9		9.5		57.1	8.4	
8.2		48.0	7.5	A	9.1	43	5.2	1.5		9.9		9.5	4.5		9.6		17.3	36.5		9.3	15	0.4	49.3	A
9.6		49.9	20.2		6.5		14.1	30.3	A	9.7		15.9	57.2		9.8		20.6	48.9		8.8		17.9	6.2	A
9.5		53.8	49.5		8.0		54.2	36.3	B	9.2		16.0	54.3		10		20.7	35.4		9.5		19.1	7.8	
7.8	34	0.4	29.6	B	9.1		58.9	18.7		9.6		31.2	51.4		9.5		26.3	5.5		9.5		31.1	9.0	A
9.7		1.6	18.7		9.4	44	0.7	7.3		9.8		46.9	24.4		9.5	5	3.7	43.9		9.8		31.4	25.8	
8.5		6.4	47.1	A	8.3		12.6	32.7	A	9.5		57.3	6.7		9.9		13.5	17.7		9.0		33.9	55.3	A
9.8		13.2	22.9		9.4		17.8	13.2		9.4	55	24.3	13.4		9.8		16.8	22.9		9.2		41.0	10.1	A
7.8		16.6	19.1	A	9.5		27.7	11.1		9.8		32.7	8.8		9.8		42.9	11.8		9.0		54.8	33.2	
9.5		32.3	49.8		9.4		30.3	16.3	A	8.3		47.0	44.8	A	10	6	15.2	9.6		9.4	16	5.2	40.1	
9.1		33.3	27.9	A	8.2	45	13.4	3.4	B	9.5		53.6	48.4		9.3		21.3	17.1		9.4		19.2	22.5	
9.5		55.7	12.6		9.7		35.2	42.1		9.0		54.3	57.0	A	9.7		22.3	24.3		8.7		21.1	22.9	A
9.8	35	7.5	37.0		8.2		55.5	56.9	A	9.8		55.9	23.8		9.8	7	0.7	25.8		9.8		26.5	52.1	
9.5		8.8	4.0		9.2	46	4.5	53.5		9.8		59.5	56.1		9.0		9.0	46.0		9.9		28.2	2.1	
9.6		20.2	56.1		9.2		12.3	24.3		9.8	56	5.9	47.7		9.8		18.8	15.3		9.8		34.0	8.2	
9.5		29.4	33.9		9.5		32.1	14.6		9.8		32.1	58.5		9.5		21.4	37.9		6.8		36.1	24.9	A
9.8		31.9	47.3		9.5		50.8	23.0		9.8		32.4	51.5		9.2		30.8	0.5		9.5	17	1.5	3.8	
9.5		46.6	22.1		8.9		57.4	53.7		9.4		41.8	26.0		9.5		54.1	29.1		9.2		7.4	9.3	A
9.0		48.5	49.9		8.2	47	16.4	26.8	A	9.7		47.8	2.1		9.6	8	9.6	36.8		9.8		8.4	40.7	
9.0	36	12.8	51.9		9.5		23.5	14.6		9.8		55.7	12.0		9.5		22.3	15.7		10		9.3	34.0	
9.0		26.9	9.7	A	10		35.9	40.0		9.4		58.2	58.4		9.4		29.4	25.4		9.9		35.6	45.8	
10		30.0	40.3		8.7	48	2.9	41.7		9.0		58.4	28.5	A	9.2		48.5	33.6		9.8		51.2	29.1	
9.5		31.3	26.9		9.8		8.1	25.8		9.5		59.0	1.9	A	9.8	9	16.5	27.3		9.8		51.7	6.6	
9.5		44.8	53.3		9.6		19.6	46.9		9.4	57	5.6	54.3		10		18.1	48.7		9.5		53.3	48.9	
8.7	37	2.9	35.1	A	9.4		23.5	10.8		9.8		36.9	42.3		7.5		18.8	55.1	A	9.2	18	9.2	6.0	A
9.5		6.9	23.7		9.4		27.4	10.2		9.3		41.1	52.6		7.7		34.5	35.6	B	9.8		16.8	4.7	
9.9		12.7	13.7		9.0		52.4	58.7		9.3		43.8	3.4	A	9.0		37.1	39.9		9.7		29.9	41.9	
9.4		16.6	29.0		9.0	49	26.0	19.0	A	9.8	58	6.5	34.3		9.5		41.3	14.5		8.3		38.4	8.7	A
9.5		35.4	59.6		9.2		32.1	18.6		9.5		7.4	39.7		9.5		49.6	58.7		9.8		44.5	22.0	
9.1		38.9	12.5		9.4		43.3	35.8		8.5		14.0	49.2	A	9.6		54.2	12.9		8.5		44.7	28.7	A

2901—2960					2961—3020					3021—3080					3081—3140					3141—3200				
	9h		—20°			9h		—20°			9h		—20°			9h—10h		—20°			10h		—20°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.5	18	59.2	36.1		8.0	30	26.1	45.2	A	8.7	42	9.1	41.2		9.9	55	40.8	9.6		9.7	10	34.5	31.3	
9.8	19	8.2	36.3		9.8		30.3	54.8		8.5		17.1	45.7	A	9.1		54.4	20.5		9.9		47.3	41.5	
7.2		16.4	8.2	A	9.5		38.8	37.5		9.8		25.7	47.5		8.6	56	4.8	8.2	A	7.0		48.2	51.7	
8.2		55.4	5.8	A	9.2	31	19.2	58.8	A	9.0		39.4	48.5	A	9.7		8.7	1.7		9.7		49.0	47.6	
8.7	20	5.3	1.1	A	9.3		22.4	44.5	A	9.1		47.0	36.9		9.4		9.5	0.1		7.0	11	0.0	18.2	B
9.0		19.5	49.9	A	9.4		26.7	36.5		8.5	43	15.2	27.5		9.7		12.9	21.9		9.1		38.4	47.6	
8.5		47.4	9.0	A	9.8		33.7	30.6		9.6		20.8	56.1		9.5		19.1	45.6		10	12	17.4	3.1	
9.4	21	3.7	56.0		9.0		43.0	42.8	A	9.1		23.5	34.0		7.7		23.9	13.9	A	9.0	13	3.0	37.1	
9.4		4.1	30.0		8.5		43.5	16.5	WC	9.7		35.6	46.0		9.0		29.5	28.0		9.5		6.8	48.4	
9.4		17.6	34.5		9.8		51.2	55.0		9.8		38.4	47.5		10		57.0	36.8		8.5		9.9	29.7	
9.5	22	1.4	15.9		9.7	32	8.3	2.1		8.5		54.7	24.2	B	9.8	57	40.2	58.1		10		32.7	3.6	
8.0		2.1	10.3	A	9.1		17.2	38.4	A	8.0		58.2	5.6	B	8.3	58	9.2	55.9		9.7		42.6	40.3	
9.8		16.9	51.2		9.4		18.6	24.1		8.1	44	4.3	47.4		9.3		18.1	1.9		9.3		44.3	28.4	
9.5		28.9	9.9		9.1		39.3	34.1	A	9.3		6.5	45.0		8.4		30.7	39.3		9.7		52.2	58.2	
5.7		31.9	6.8	A	9.7		41.7	35.6	A	9.4		9.0	11.8		8.9		35.6	22.7	A	9.6	14	8.3	18.1	
9.8		40.5	27.5		9.2		48.8	19.8		7.8		16.6	23.5	B	9.0		35.9	45.8		9.0		20.8	19.7	A
10		48.0	45.2		9.5	33	10.4	55.2		9.9		27.9	7.2		9.0		54.2	53.3		8.7		21.8	9.0	A
9.4		52.9	1.1	A	9.3		26.5	23.2	A	9.4	45	59.8	22.1		9.7		56.9	37.0		9.7		49.9	50.0	
9.6	23	23.0	41.0		9.8		45.6	43.4		9.4	46	0.9	36.8		9.3	59	16.4	39.3		9.8		50.6	40.4	
9.0		32.9	22.4	A	9.3		53.1	57.2		8.8		28.1	7.2		9.3		17.2	33.7		9.5	15	3.8	36.3	
8.0		50.4	20.8	A	7.7		56.6	55.2	B	9.4		33.9	45.8		7.2		18.8	14.5	A	7.8		15.9	32.7	A
10	24	10.0	36.6		9.0	34	0.7	36.0	A	8.8		40.3	21.2		8.4		42.3	34.8	A	9.8		45.2	32.9	
8.8		14.8	22.7	A	9.3		19.9	39.9	A	9.1	47	8.2	23.0		9.3		45.5	18.7		9.3	16	4.8	35.3	A
9.9		17.3	38.6		9.8		44.0	19.4		9.4		11.8	27.0		7.0	0	17.2	32.8	A	10		51.3	11.6	
10		19.2	13.6		9.6		46.8	11.0		9.3		27.6	8.4		9.8		20.3	26.1		9.2		53.6	54.3	
9.1		37.5	57.0		9.3		55.3	50.2	A	10		31.1	5.3		9.7		41.6	36.2		9.8	17	4.1	50.6	
8.8		40.2	4.9	A	9.8		57.6	27.2		9.5	48	1.7	21.8		9.8		44.3	7.7		10		6.0	46.5	
10		46.5	34.1		9.5	35	0.1	42.0	A	9.8		43.1	5.5		9.3		46.3	2.2	A	9.8		25.1	43.1	
8.3	25	1.6	42.0	B	9.8		10.4	22.0		7.7		58.2	3.6	B	9.2	1	7.1	4.7	A	8.4		48.8	47.2	B
9.1		20.2	55.2		9.0		16.9	15.4	A	9.8	49	7.7	10.2		9.8		26.9	22.2		10	18	0.5	17.6	
8.7		31.2	4.0	A	9.7		17.7	23.4		8.7		7.8	48.4		9.4		40.3	57.1		9.2		27.6	22.3	
9.4		33.7	33.0		7.7		44.5	28.3	A	8.2		46.7	34.3	B	9.0		41.1	40.3		9.9		32.9	44.5	
10		52.0	35.0		8.7	36	2.4	19.2	A	9.0		53.5	9.6		9.4		43.4	42.2		9.4	19	9.6	15.8	
9.1		56.3	44.1		9.9		2.6	9.3		9.7		56.7	2.0		9.6		52.9	27.9		8.7		23.0	15.4	B
9.3	26	12.0	56.9		9.0		18.4	15.8	A	9.5		57.4	44.2		8.8	2	33.0	57.7		9.7		27.0	42.5	
5.0		31.4	28.7	B	9.5		22.5	40.0		10	50	25.2	44.7		8.2		57.0	58.0	B	10	20	5.4	59.4	
8.5		32.1	4.6	A	9.5		39.3	50.0		9.7		39.6	32.5		9.4	3	23.7	13.1		10		28.5	28.3	
7.0		36.9	45.0	A	9.0		51.2	55.5	A	9.4		52.9	43.9		9.9		40.5	32.1		8.4		32.1	41.9	
9.3	27	11.4	53.3		9.5		55.4	40.1		7.7		58.7	29.3	A	9.9		42.5	57.1		9.1		34.5	9.7	
9.1		12.1	50.2		8.2	37	1.3	29.8	A	9.6	51	8.4	47.7	A	8.4	4	16.3	6.0		8.6		42.4	41.2	
8.8		25.5	25.6	A	9.5		20.7	5.3		9.0		35.0	52.4	A	9.9		21.7	18.0		8.5		59.9	59.6	A
9.0		25.9	37.3	B	10		39.3	50.1		9.1		42.1	18.4		9.0		38.0	47.9		8.8	21	3.2	57.8	A
9.4		29.1	42.6		9.8		45.2	5.7		9.0		45.1	32.3	A	8.9		56.2	17.0		9.3		7.3	39.7	
9.3		35.0	51.1		9.5	38	6.9	7.0		9.8	52	0.6	32.1		8.0	5	5.3	33.7	B	10		41.3	7.4	
10		44.0	43.9		9.8		8.8	14.9		9.0		19.0	58.6	A	9.1		43.2	23.2		9.6		42.7	22.3	
9.8		53.3	24.8		9.3		16.7	39.2	A	9.0		55.9	52.4	A	9.4		55.9	3.9		9.1		44.0	47.7	A
9.8		59.8	40.8		9.8		20.6	18.1		9.9	53	31.9	3.6		9.4	6	5.3	35.9		9.8	22	16.1	31.5	
8.5	28	0.6	27.4	A	9.8		20.6	9.2		9.9		33.1	26.4		10		14.2	27.4		9.5		16.3	59.4	
10		12.7	26.0		8.2		31.3	0.3	B	9.3		41.1	39.9		9.0	7	6.0	11.7		9.7		20.4	57.1	
9.8		46.7	18.2		9.8		40.9	50.4		9.7		51.6	38.8		9.3		21.6	21.3		9.7		38.6	42.9	
10		51.0	42.7		10		42.1	38.2		9.1	54	7.3	42.0	A	9.6		55.1	13.7		8.7		49.5	2.9	A
9.0		56.7	21.7	A	10		58.5	41.5		9.4		19.5	27.2		9.3	8	31.2	57.9		9.0		56.1	0.7	A
9.8	29	24.0	5.2		9.1	39	3.4	21.4		9.7		49.8	39.6		9.5		35.9	31.5		9.2	23	9.9	43.0	
9.9		26.1	21.1		9.2		19.9	42.0	A	8.7		52.9	16.2	A	9.7		42.2	46.8		9.3		29.0	29.7	
8.0		38.1	14.6	A	9.4		50.9	54.2		9.5	55	4.9	22.1		9.2		48.1	33.2		9.3		50.3	0.8	
8.2		41.8	49.3	A	9.8		54.8	46.9		9.2		17.5	1.8		10	9	9.7	53.9		8.8		56.2	28.0	A
9.8		43.3	29.5		9.6	40	8.9	57.9		9.8		18.4	19.2		9.7		19.5	16.7		9.5	24	0.3	17.7	
9.7		58.0	0.0		9.4		51.4	8.3		9.0		20.8	51.9		9.7		21.5	16.8		9.4		6.2	53.5	
10	30	2.7	33.1		9.8		55.0	21.5		8.8		22.8	8.7	A	9.8	10	33.4	9.2		9.2		6.4	28.9	A
9.3		18.3	55.6	A	9.8	41	31.0	52.5		9.0		26.0	31.3		9.7		34.5	23.5		9.3		53.8	45.2	A

3201—3260				3261—3320				3321—3380				3381—3440				3441—3500			
	10h		—20°		10h		—20°		10h—11h		—20°		11h		—20°		11h		—20°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
9.2	24	55.8	25.7	8.0	38	50.8	12.6	B	9.0	53	59.9	42.5	9.2	8	20.7	35.4	8.3	23	30.0	45.1	
9.4	25	29.7	3.8	9.8		57.0	26.8		9.1	54	7.4	23.5	9.3		28.6	21.6	9.4		45.9	45.5	
9.5		47.0	2.9	9.4	39	10.9	9.1		9.9		11.2	49.4	9.7		36.0	58.8	9.5		53.4	38.9	
9.8		48.8	19.0	9.9		28.1	35.2		8.8		54.4	42.7	9.5		40.0	8.8	8.5	24	0.7	19.6	
9.1		58.1	52.2	A 9.8		48.9	7.8		9.2	55	0.3	31.9	9.6		53.9	49.9	8.2		13.7	10.6	B
9.1	26	22.4	20.0	9.9		49.8	27.5		7.5		20.8	37.9	9.7	9	5.8	49.3	9.5		18.5	59.4	
9.4		24.3	31.4	10		51.4	53.5		9.5		38.7	55.1	9.5		9.5	8.5	9.7	25	1.6	25.0	
9.2		40.1	53.3	10		53.3	39.7		9.9	56	15.5	46.1	9.7		28.9	27.7	10		21.5	2.7	
9.2		46.1	47.4	A 8.5	40	8.6	45.2		9.2		20.9	51.8	9.0		56.9	5.8	9.5	26	21.4	56.5	
9.3	27	6.9	38.2	9.4		18.9	14.1		8.9		30.3	47.5	9.6	10	28.7	40.9	9.1	27	17.9	58.8	
9.1		12.8	52.2	A 9.7		41.0	49.5		9.8		33.1	56.8	9.6		35.4	7.0	9.8		24.6	19.6	
9.3		33.7	14.1	7.8	41	17.7	24.2	B	9.6		44.7	13.4	9.4		39.6	55.8	9.8		52.8	57.3	
9.5		47.2	1.1	9.8		27.4	18.4		9.6	57	19.5	5.8	9.9		51.3	54.6	10		53.5	43.7	
8.8		50.6	6.0	9.6		46.2	46.2		9.0		20.2	9.4	9.5		52.5	16.5	9.3		58.2	2.4	
9.5	28	4.5	59.9	9.6	42	4.5	39.0		8.0		24.6	20.5	B 9.8		56.2	54.7	9.8	28	2.7	38.2	
10		18.9	46.6	9.1		17.3	39.4		9.8		38.1	3.7	9.1	12	0.8	20.1	8.8		14.8	51.7	
9.9		23.2	21.0	8.9	43	15.9	37.1	A	9.5	58	1.5	11.0	9.8		5.7	51.8	9.4		26.5	4.7	
9.8		39.0	58.4	9.8		26.2	7.5		10		3.3	38.9	8.0		15.9	37.9	B 9.5		50.0	41.8	
10		49.9	46.5	10		55.2	6.4		10		7.6	18.3	B 8.3		36.2	11.3	B 9.4		53.4	47.8	
9.0		52.1	53.1	A 8.2	44	12.4	45.4	A	10		9.8	41.1	9.5		37.2	39.6	9.7	29	16.9	43.1	
8.5		58.3	41.9	A 9.9		13.7	14.4		9.5		13.1	48.8	9.5	13	30.5	58.5	7.7		38.4	9.7	B
9.8	29	3.5	54.4	9.6		19.3	29.2		10		20.4	3.1	9.8	14	10.1	55.3	9.4		43.3	46.1	
9.0	30	12.0	11.4	6.7		34.3	28.8	A	9.3		38.5	51.9	9.7		12.2	3.6	9.5		50.3	45.8	
8.7		15.9	55.5	A 9.9		54.2	16.0		9.3		40.5	52.1	10		16.4	45.6	8.8	30	5.3	39.7	
8.5		59.9	3.9	A 10	45	19.7	14.4		10		59.0	57.5	10		47.6	42.0	9.1		17.5	23.6	
9.6	31	13.6	24.1	9.5		23.1	41.0		8.9	59	25.5	51.5	A 9.1		49.5	49.7	10		40.4	23.8	
10		24.7	0.6	9.1	46	0.3	33.6		7.0		25.9	22.7	A 9.8	15	49.1	17.6	9.9	31	5.7	54.6	
9.6		31.5	50.7	8.6		45.2	19.4		9.8		32.8	43.5	9.7	16	8.1	33.7	9.5		8.9	18.7	
9.6		46.3	45.6	9.9	47	13.0	51.0		10	0	20.9	50.2	8.0		39.2	27.9	A 9.4		14.6	58.7	A
9.4	32	0.1	5.6	9.8		17.7	29.3		8.7		40.3	1.7	9.8		44.1	15.0	9.5		31.3	15.3	
9.8		15.3	50.3	10		21.5	1.3		10	1	1.6	36.6	9.2		53.7	0.1	A 7.5		36.9	22.2	B
9.5		21.6	37.5	8.8		28.7	38.4		7.7		2.6	44.0	A 9.8	17	11.5	26.1	9.3		42.8	11.3	
8.0		30.4	5.4	B 9.4		35.4	48.0		8.5		21.3	0.0	B 10		28.4	55.6	9.3		56.5	40.8	
9.8		49.2	52.7	9.9		54.8	36.1		9.6		30.0	21.2	9.0		37.0	17.6	10		59.4	52.2	
9.1	33	14.3	58.1	9.4	48	10.0	58.7		9.4		40.6	50.6	9.9		52.6	36.9	9.5	32	16.7	19.3	
9.5		27.5	21.5	9.3		25.7	37.6		9.3		47.3	7.6	8.5	18	4.0	27.9	9.2		25.7	18.8	
9.8		30.3	31.0	8.6		37.9	44.7		9.1	2	14.3	8.7	8.4		17.3	25.9	B 9.8		41.3	26.6	
8.8		32.9	49.2	A 9.2		49.6	29.1		9.8		22.5	55.8	9.8		25.8	53.7	9.2		44.6	53.9	A
10		51.5	33.4	8.7	49	1.0	21.3		9.3	3	20.9	29.8	8.2	19	2.1	36.2	B 9.5	33	24.8	17.0	
9.6	34	37.4	18.6	8.7		4.5	20.0		9.7		23.3	57.5	7.0		21.0	33.3	B 9.8		37.7	8.0	
10		40.0	35.4	7.8		34.1	30.2		9.6		31.0	34.9	9.3		57.7	56.0	9.2		38.8	24.1	A
9.5		48.7	52.5	8.8		54.8	48.0		9.7		42.5	35.0	9.0	20	8.3	16.0	A 9.8		43.2	16.3	
9.5		51.1	46.3	9.7	50	0.2	37.6		9.5		49.9	43.5	9.8		21.9	26.3	9.2		46.3	34.8	
9.3	35	10.0	38.8	9.0		6.9	53.2		9.5	4	6.3	22.1	9.5		28.9	41.5	9.2		48.2	22.1	
10		11.2	30.6	9.8		46.7	43.3		10		28.6	37.5	9.0		29.4	21.9	B 9.0	34	12.9	3.3	A
9.8		27.4	30.5	9.4	51	30.4	46.3		9.4		44.8	17.5	9.4		36.0	29.0	9.6		16.2	19.1	
9.2		42.2	7.3	9.2		44.8	9.0	A	8.0		53.9	32.7	A 9.8		38.4	21.3	9.0	35	43.2	58.6	A
9.1	36	8.3	16.2	A 8.8		55.5	23.5	A	10	5	0.2	12.5	9.5	21	2.5	30.1	9.1	36	3.2	31.9	A
9.5		13.2	12.6	10		58.0	31.3		8.5		2.3	25.6	A 9.3		4.4	25.9	9.6		9.0	44.7	
9.7		16.1	57.9	9.1	52	2.9	56.1		9.0		5.8	29.6	A 10		4.7	47.8	9.6		11.1	2.3	
9.3		18.5	14.2	A 9.3		5.3	51.0		9.0		6.6	30.8	A 9.8		26.0	43.6	9.4		14.1	12.7	
9.8		41.4	35.7	10		7.5	35.1		9.1		8.9	37.1	10		34.6	30.5	7.3		28.6	13.7	
9.7	37	21.4	41.0	9.3		19.4	17.7		9.5		9.8	35.3	9.8		41.9	39.0	10		43.2	35.9	
9.0		24.4	40.3	A 8.0		20.6	16.0	A	6.5		26.2	57.8	A 9.4	22	4.3	10.5	9.5		45.5	14.3	
9.3		35.2	26.1	9.4		28.8	59.7		9.4		28.7	53.0	8.2		29.4	32.4	A 9.9	37	0.2	0.6	
9.8	38	13.0	48.1	8.5		41.9	33.6		9.8		56.7	56.6	9.5		41.5	1.6	9.2		33.3	45.9	
9.3		19.2	54.5	10		49.6	35.6		9.5	6	19.8	29.7	9.7		44.4	47.5	9.8		36.4	49.2	
9.1		25.2	35.2	9.9		49.9	30.2		9.1	7	4.9	43.1	9.5		54.1	50.6	9.5		55.7	8.6	
9.1		46.5	54.7	9.4	53	23.6	46.5		9.8		19.2	17.1	9.7	23	5.8	43.7	9.0	38	4.5	47.9	
9.6		48.2	20.5	9.9		56.9	35.7		10		37.1	56.1	9.0		28.9	38.4	7.6		8.8	39.9	B

3283: ausserordentlich roth

3501—3560				3561—3620				3621—3680				3681—3740				3741—3800			
11h		—20°		11h—12h		—20°		12h		—20°		12h		—20°		12h—13h		—20°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9·9	38	19.2	2.0	9·5	54	58.7	13.1	8.2	11	24.5	42.9	A	9.2	29	20.8	47.6	A	9.6	47	39.7	34.5	
9.8		20.1	31.9	9.8		59.9	6.0	9.6		54.5	22.5		9.6		24.7	32.9		8.3		42.3	57.1	
9.4	39	0.2	40.8	9.0	55	19.3	35.5	A	9.4	12	1.4	50.4		9.3		53.2	16.5		9.3		46.2	52.9	
7.7		30.8	40.0	A	9.8		26.4	22.8		8.8		26.4	41.0	A	9.7	30	19.2	39.3		9.8	48	22.8	20.8	
9.7		33.2	1.9	10	56	19.9	50.8		9.3		28.1	50.4	A	9.5		37.4	41.3		9.8		56.5	17.0	
9.6		41.9	38.0	9.2		42.3	57.3		9.9		57.5	31.3		9.1		37.5	35.8	B	10	49	38.6	13.1	
10		55.7	19.9	9.1		50.3	32.3		9.2	13	2.7	1.8		9.1		56.5	43.5	A	9.8		40.4	31.6	
9.8	40	41.3	15.0	10		50.3	14.1		9.5		40.5	16.0		9.4		57.1	49.5		9.1		48.1	4.0	
9.5		43.0	32.7	A	7.5		52.3	13.6	A	9.4		57.4	48.5	A	9.6	31	4.5	31.2	A	8.5	50	5.4	4.6	
9.8	41	11.9	30.7		9.8		53.9	31.8		9.6	14	22.0	51.6	A	10	32	8.7	1.4		9.5		6.1	35.1	
9.2		21.4	45.8	A	8.5	57	15.2	31.9	B	9.6		49.6	1.4		8.5		16.6	10.2	B	9.1		19.8	54.5	
9.4		22.0	30.5		9.3		43.8	15.7		9.7	15	8.5	8.2		9.4		21.5	26.4	A	9.7		42.7	55.1	
10	42	10.7	47.6		9.2	58	2.9	9.5		9.5		9.4	28.2	A	9.3		46.5	29.5	A	9.6		44.7	55.8	
9.5		17.3	8.8		10		21.8	58.8		8.9		26.4	13.3	A	8.8		56.1	55.3		9.7		54.7	55.6	
10		27.9	35.7		9.0		39.3	52.1	A	10		36.9	30.5		9.3	33	16.1	41.6	A	9.2	51	4.2	18.6	
8.5		49.3	22.7	A	9.8	59	1.3	8.7		9.8		53.2	41.7		9.2		48.6	12.4		9.8		12.1	34.6	
9.2	43	4.3	1.3		9.8		12.2	18.3		9.9	16	11.2	40.1		8.8	34	2.0	53.5	A	6.8		14.1	45.4	B
9.8		9.4	29.4		9.6		31.5	38.0		9.8		33.5	6.6		8.8		6.6	7.8		9.0		33.7	40.9	
7.7		29.7	11.3	A	9.2		58.4	48.0	A	9.0		36.8	31.4		8.5		17.4	59.8	A	10		50.4	12.2	
9.3	44	1.8	26.5		9.1	0	53.6	15.2		9.5		48.9	28.3		9.5		52.5	17.2		9.0	52	5.5	35.8	
10		10.7	10.9		9.4	1	6.7	53.2		9.2	17	5.5	1.7		9.3	35	2.9	59.9		9.1		10.7	59.7	
7.2		11.7	49.5	A	7.8	2	5.1	14.5	B	8.8		28.4	51.5		9.7		21.4	23.6	A	9.4		12.2	31.3	
9.8		14.2	23.8		9.5		40.1	58.8		9.1		29.4	9.6	A	9.1		51.8	34.3	A	9.2		17.8	32.2	
9.4		25.7	5.5	A	9.0		44.1	53.7	A	9.0		43.8	13.8	A	9.6	36	1.7	37.5		9.4		45.5	58.0	
10		49.0	1.0		9.9	3	13.8	50.8		9.1		46.2	25.6		9.8		27.3	13.4		9.8	53	3.3	2.6	
9.2		57.3	1.7	A	9.4		23.0	13.6		10	18	43.7	25.0		9.3		44.4	45.4	B	7.8		14.7	38.7	B
10	45	2.5	33.2		8.9		32.1	6.0		9.0	19	37.7	54.6		9.7		45.7	36.7		9.6	54	2.7	51.5	
9.3		7.1	26.0		9.3		38.8	0.7		9.5		39.0	16.2		9.0		51.3	52.5	A	8.5	55	27.9	25.7	
9.5		17.7	1.7		9.3		52.2	49.9		7.8		58.6	25.7		9.5	37	28.6	18.0		9.4	56	18.4	43.8	
9.6	46	40.1	23.8		9.2	4	4.9	21.4		9.8	20	9.5	35.3		9.1		49.2	46.2	A	9.2		44.6	50.1	
9.5		57.5	12.4		9.6		8.0	5.1		9.8		10.1	16.3		7.5	38	12.7	58.5	A	7.5	57	7.7	44.3	B
9.0	48	14.8	48.0		9.4	5	12.8	31.4		9.5		19.6	3.3		9.4		24.3	18.9		9.8		41.3	15.9	
9.7		21.7	52.5		9.5		17.9	57.0		9.5		45.7	12.7		8.8		48.1	3.4		9.1	58	30.4	57.1	
9.5		22.5	4.4		9.4		30.8	56.4		9.5		50.6	27.2		10	39	20.2	30.0		9.4		35.5	39.6	
7.7		28.5	50.8	B	9.1		45.3	36.7		8.3	21	54.9	35.6		9.5		30.2	21.9		9.0		56.2	24.2	
9.4		40.6	42.7		9.1		52.5	43.7		9.8		55.5	28.3		9.4		32.4	0.8		9.1	59	0.7	24.2	
9.0		47.9	10.8	A	9.8		55.4	25.7		9.7		57.1	57.9		8.2		48.1	40.3	A	9.8		8.4	42.8	
9.0		50.7	42.4	A	8.0	6	3.5	6.7		9.4	22	35.8	50.1		9.6	40	31.7	9.9		9.5		21.9	1.7	
9.8	49	5.7	50.8		8.0		6.9	15.8		8.4	23	13.1	50.3	A	9.5		32.5	7.7		9.5		25.1	34.3	
9.2		15.6	36.7	A	8.5		8.9	49.8	A	9.9	24	3.6	34.2		9.7	41	16.6	54.6		9.4		34.8	59.7	
9.5		26.0	21.9		9.7		19.0	6.1		9.4		4.4	49.6		9.7		35.1	23.7		9.1		42.8	6.3	
10		35.2	44.4		9.1		26.3	45.4	A	7.3		19.5	10.5	A	8.9		36.0	59.6	A	9.2	0	0.1	14.0	A
9.6	50	6.6	29.8		9.5	7	1.7	34.9		9.9		23.1	51.1		9.5		47.4	40.1		9.7	1	3.2	23.3	
9.6		8.0	19.5		10		7.8	12.3		9.5		32.4	33.2		8.7	42	11.1	27.6	B	9.5	2	0.5	17.3	
8.4		32.5	31.2	A	8.9		27.0	43.1	A	9.2		50.1	30.9		10		38.4	38.1		8.6	3	18.9	35.9	A
9.4	51	2.7	53.9	A	6.1		30.8	2.1	B	9.4		53.3	31.1		10		39.4	36.4		9.1	4	1.4	22.5	
10		21.3	57.5		9.5		53.9	49.8		6.5		59.4	24.5	B	9.4		53.5	29.1		7.5		23.4	6.4	A
9.4		27.6	57.9	A	9.1	8	13.1	35.5		9.3	25	18.9	22.5		8.7	43	19.0	26.6	A	9.5		29.3	32.1	
10		42.3	3.9		9.5		33.7	57.7		8.5		43.0	16.9	A	10		51.9	25.8		9.8	5	24.7	14.8	
9.5	52	9.3	3.1		9.2		46.3	5.2	A	9.5		56.4	49.2		9.0	44	55.6	8.4	A	9.7		40.6	30.5	
9.9		15.6	46.7		9.5		46.3	17.5		8.5	26	38.1	55.3	B	10	45	3.0	16.6		9.1		49.0	34.3	
9.3		20.2	40.0		9.4	9	17.3	47.4		9.3		47.1	44.4		10		34.1	11.7		9.5		57.1	27.9	
9.8		27.5	22.0		9.3		21.7	12.1	A	9.6		53.7	34.4		9.6		43.6	24.0		9.2	6	35.6	44.0	
9.8	53	12.9	47.6		9.4		36.2	3.0	A	8.8	27	22.0	2.1	B	8.7		50.2	30.2		9.0	7	5.8	35.8	
8.0		32.5	26.2		9.0		56.1	15.0	A	8.4		22.8	24.5		9.5	46	6.6	54.4		9.1		10.9	6.8	A
9.8		32.7	31.9		9.8	10	19.1	42.1		9.4		43.8	52.8	A	10		25.9	44.0		8.8		27.2	47.8	B
9.5		53.2	19.8		8.6		21.5	3.6	A	10	28	34.4	8.0		8.8		44.3	26.2		9.7		33.8	50.2	
9.0		55.8	6.8		7.5		45.1	1.9	B	9.2		46.7	23.5		9.1	47	3.8	31.4		9.8		55.0	19.6	
9.4		56.2	2.8		8.0		56.4	0.3	B	7.8	29	5.2	30.5	A	9.5		4.6	24.2		8.7	8	7.3	9.5	A
8.2		59.2	43.2	A	9.5	11	6.7	51.2		9.1		17.3	8.5		9.5		32.7	34.5		10		39.4	48.2	

3662: 18:94 10′55″.4 B_1, Ep. 1885.30

3801—3860					3861—3920					3921—3980					3981—4040					4041—4100				
	13h		−20°			13h		−20°			13h—14h		−20°			14h		−20°			14h		−20°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.0	9	32.2	15.3	A	9.0	32	28.1	59.1	A	9.5	48	5.4	2.8		9.8	4	38.0	17.2		9.8	22	28.1	42.8	
7.8		35.2	46.1	A	9.1		41.0	11.6		9.5		19.9	56.4		9.3		56.4	29.1		9.4		41.3	36.2	A
9.1		56.5	41.2	A	9.5		58.9	4.5		9.8		20.9	27.1		9.5	5	0.6	32.6		7.3		42.3	4.1	B
9.6	10	26.8	9.8		9.1	33	4.8	0.8	A	8.8		47.6	3.7		9.6		1.4	28.4		9.2		50.6	42.4	A
9.0	11	46.1	27.7		9.4		5.2	58.2		9.0		49.6	8.7		9.8		39.0	44.6		9.0		55.3	3.7	
9.9	12	1.0	16.5		9.5		6.8	48.6		9.6	49	16.8	0.9		9.5	6	8.3	50.6		9.4	23	20.4	58.2	
9.5		22.7	3.0		9.8	34	18.6	57.3		8.9		17.5	56.7	A	9.5		11.1	12.5		7.9		52.5	18.4	B
7.8		40.9	6.8	B	9.4		54.6	58.0		9.8		32.5	54.3		9.4		32.2	30.4		8.7	24	24.8	33.4	A
9.7	13	32.3	57.0		9.5	35	32.2	49.8		8.5		53.0	53.1	A	7.2		46.9	23.2	A	9.8		36.2	35.6	
9.3		44.5	28.4		8.5		47.7	28.9	A	9.1	50	58.9	49.0		9.5	7	24.9	18.9		9.5		50.5	38.3	
9.1		59.6	59.5		9.3		56.3	47.4		9.8	51	30.0	48.7		9.8		41.0	0.9		9.3	25	33.5	11.5	
9.5	14	5.4	22.8		8.9	36	7.4	7.2		9.5		35.7	7.2		9.9		47.1	26.2		8.3		36.4	23.5	A
9.0		9.7	53.5	A	8.7		29.6	29.3	A	9.8	52	13.4	48.7		9.3	8	46.0	11.8		9.2	26	34.8	29.7	
8.5		29.0	5.7	B	10		42.4	32.8		10		24.0	1.9		8.8		58.1	39.3		9.6		45.7	59.8	
9.4		59.2	43.2		9.6	37	3.8	33.5		9.5	53	11.7	5.5		8.9	9	20.6	38.7		9.9	27	15.2	27.6	
8.0	15	0.5	39.2		9.9		20.8	43.4		9.1		14.6	16.4		8.3		32.4	4.8		9.7		46.7	49.6	
9.3		26.2	47.1		9.8		24.0	45.6		9.5		27.8	53.7		9.4	10	11.6	0.1		9.1		50.9	17.2	
7.0	16	6.7	9.2	A	9.8		25.0	23.9		9.4		31.0	18.2		9.6		15.0	4.0		9.8	28	3.6	49.9	
9.8		14.0	57.0		9.2		25.9	46.4		9.1		38.0	17.9		10		23.9	10.7		9.5		32.2	35.1	
9.5		18.3	21.2		9.4		50.4	5.4		9.0		58.4	25.7		9.6	11	20.9	44.4		10	29	11.6	41.1	
9.3		37.7	31.1		9.2		51.7	36.3		9.6	54	23.4	2.4		9.4		29.8	40.4		9.8		13.6	27.8	
9.6	17	21.5	52.9		9.8		53.6	43.3		9.1		29.1	11.2	A	9.5		35.0	2.2		9.5		19.4	9.7	
9.2	18	4.4	19.9	A	9.3	38	12.7	46.7		8.2		37.2	57.6	A	8.0		42.3	11.9	A	8.8		55.6	41.2	
9.4	19	12.6	38.4		9.5		31.2	48.1		9.3		39.1	10.7	A	9.0	12	9.2	19.1		9.8	30	6.7	59.0	
9.3		34.6	54.2		7.8		49.2	7.4		9.1	55	10.9	18.8		10		18.7	15.2		9.5		38.9	52.6	
9.3		35.9	51.3		9.8	39	9.0	5.4		9.2		22.3	30.0		9.5		28.5	50.4		9.1		46.2	18.5	
9.7		50.9	46.9		8.8		12.6	44.5		8.7		32.8	5.7	A	9.5		46.5	39.2		9.5	31	50.6	49.0	
9.6		52.6	53.3		8.9		18.0	7.6		9.8		35.7	1.2		9.7		50.8	19.8		9.2	32	13.2	13.2	A
9.8	20	1.4	25.6		9.4		29.3	57.4		9.5		45.6	0.3		8.5	13	35.9	55.8	A	9.4		18.6	3.8	
8.5		22.8	58.7	A	9.6		38.0	47.3		9.5		48.5	57.4		8.8		43.4	1.2		9.9		57.3	32.7	
9.3		28.2	36.3		9.4	40	13.0	2.1		8.1	56	3.2	36.7	A	9.5		54.3	58.7		9.5		58.0	3.0	
9.5		33.1	47.8		7.0	41	0.1	1.0	A	8.7	57	3.1	52.7	A	9.8	14	6.3	53.4		9.8	33	7.7	15.5	
9.5		55.5	9.3		9.0		6.3	8.6	A	9.9		6.9	31.6		7.1		28.4	5.8	A	10		50.0	18.3	
9.0	21	43.4	5.1		9.1		11.6	6.4	A	9.8		26.5	2.2		9.8		28.6	17.5		8.3	34	22.4	34.5	B
9.8	22	2.2	58.9		9.7		30.9	26.0		9.5		49.5	30.7		9.4		55.5	35.4		9.1		41.1	9.0	A
9.5		21.0	28.9		9.8		44.7	4.8		9.8	58	15.4	15.0		9.8		58.2	58.4		9.5		44.9	30.3	
8.8	23	20.3	40.3	A	8.8	42	14.7	32.8		10		20.0	40.8		10	15	14.0	46.8		9.2		53.0	55.1	
9.6		26.2	55.2		7.2		16.6	8.8	A	9.8		46.2	3.7		9.2		25.1	34.6		9.2	35	22.3	18.4	A
9.6		28.1	3.2		9.0		22.8	23.4		9.8		51.9	31.2		9.0		41.3	20.9		9.8		38.9	29.9	
8.8	24	9.8	12.3	A	8.5		55.4	40.8	A	9.2	59	30.2	23.2		8.0	16	51.3	13.1		9.4	36	3.3	1.3	
9.2		31.2	42.1	A	7.7		59.1	15.6	A	9.0		33.5	57.9		9.3		58.5	54.6		9.3		22.6	51.7	
9.3		51.0	0.0		10	43	27.3	30.5		9.2		39.8	47.8		9.3	17	29.1	44.5		9.8		42.9	52.0	
9.7	25	1.8	15.7		9.8		47.2	52.2		9.5		46.2	22.1		7.7		37.6	46.3		9.7	37	11.3	33.1	
9.7		45.7	42.9		9.3		53.5	14.3		8.0		51.1	30.1	A	9.5	18	17.5	17.4		9.8		27.4	29.2	
9.0	26	17.7	23.2		9.9	44	39.5	0.6		9.8		52.3	37.7		8.5		23.7	21.9		9.4		42.5	56.6	
9.7		27.8	9.0		9.3		43.9	14.5		9.0	0	34.4	51.0	A	9.4		29.6	24.1		9.8		48.7	51.6	
9.7		42.5	58.6		9.8	45	7.9	41.9		9.5	1	16.9	26.4		9.5		57.2	28.6		6.4		57.2	33.3	A
9.0		56.0	59.0		9.3		11.8	2.2		9.6		25.2	25.6		9.5	19	11.2	3.1		9.0	38	7.3	31.1	
9.4	27	23.4	45.7		9.4		19.5	49.4		9.1		31.6	34.4		9.5		14.6	49.5		9.5		9.0	33.4	
9.5	28	41.5	41.8		9.9		25.9	40.1		8.3		33.3	30.5	B	8.9		29.3	9.1	B	9.8		32.0	35.6	
9.1		54.2	2.9		9.6		31.1	49.8		8.2		59.5	32.5	B	9.1		31.2	14.7	A	9.6		44.2	42.2	
8.3		55.3	57.9	A	9.4		35.5	46.6		9.7	2	14.0	9.8		9.2		35.2	15.6	A	9.7		58.7	21.9	
9.6	29	15.6	43.0		9.8		46.6	42.4		9.7		15.8	8.5		9.5		43.1	2.8		6.3		59.5	42.6	A
9.2		21.8	51.4	A	8.3		50.2	30.1	B	9.2		24.8	39.8		9.4	20	7.4	36.3		9.8	39	32.8	41.4	
9.3		42.7	49.6		8.0	46	51.6	47.3	A	9.4		31.3	52.5		9.8		30.2	6.3		9.8		39.7	34.8	
8.8	30	17.2	1.0	A	9.0	47	3.2	31.0		9.7		39.3	8.4		9.6		33.9	38.7		9.8		44.5	21.4	
8.5		53.6	50.8	A	9.8		3.8	49.4		9.7		43.0	48.4		9.2	21	40.0	18.8	A	9.2		45.5	15.4	A
9.5	31	22.5	9.1		9.5		13.5	38.8		10		48.6	24.5		9.7	22	7.3	50.2		9.5	40	27.8	59.8	
9.8		23.3	43.8		9.0		24.2	51.1	A	10	3	1.0	0.4		8.6		14.6	51.2	A	9.8		35.4	43.0	
9.5	32	24.8	32.8		9.5		31.3	17.8		9.7	4	34.5	18.1		9.6		17.5	18.6		8.8	41	58.3	54.4	

4101—4160

	14h—15h	—20°	
m	m s	′	
8.9	42 2.7	3.9	A
8.8	17.4	9.9	A
9.4	40.9	4.3	A
9.6	53.1	33.8	
9.7	56.8	8.9	
9.4	43 2.3	0.8	
7.9	32.0	0.8	B
9.8	44.8	8.3	
8.5	55.3	12.5	A
9.8	44 2.8	48.0	
9.5	3.5	51.6	
9.9	38.2	59.4	
9.4	45 37.0	22.9	
9.3	46 30.9	33.4	
8.9	46.6	45.7	A
9.4	47 11.6	55.8	
9.5	14.5	32.5	
9.4	25.6	25.6	
9.2	36.1	24.7	
9.6	51.6	39.1	
9.4	55.5	48.0	
9.3	48 55.2	5.3	
8.7	59.8	45.7	B
9.4	49 0.0	58.8	
6.0	1.6	45.9	B
9.7	8.8	43.3	
9.5	50 17.1	46.9	
9.5	29.0	18.4	
9.0	34.0	16.8	
9.5	41.9	57.7	
9.8	55.0	48.5	
9.8	51 13.5	13.9	
9.2	27.9	16.7	
8.5	29.0	36.0	B
9.5	35.4	20.8	
9.3	52 41.8	45.7	
8.5	53 12.7	31.6	A
8.6	25.9	39.5	A
9.7	25.9	9.2	
9.8	55.0	55.8	
9.2	54 30.4	50.9	A
8.9	35.4	49.8	A
9.7	47.4	50.4	
9.6	56 19.5	35.1	
9.5	33.8	57.0	
9.3	57 2.5	22.6	
9.7	20.5	26.9	
9.3	25.9	59.3	
9.5	40.1	1.0	
9.6	58 4.8	55.4	
8.3	59 7.3	7.8	B
9.4	11.8	10.0	
9.7	20.1	1.3	
9.2	21.1	48.6	
9.5	41.9	17.3	
9.4	0 19.4	56.6	
8.0	29.3	7.8	
9.2	31.6	57.9	
9.4	49.1	58.6	
10	1 29.7	15.1	

4161—4220

	15h	—20°	
m	m s	′	
9.7	1 41.4	40.4	
9.2	56.9	0.4	
9.3	3 11.7	8.5	A
8.7	13.0	45.1	A
9.5	30.9	34.6	
9.6	37.2	6.2	
9.0	41.9	34.2	
9.7	42.1	41.7	
9.3	47.2	12.5	A
8.9	4 16.3	23.7	A
9.7	52.6	0.1	
9.5	58.5	21.2	
9.8	5 12.8	29.7	
9.9	14.1	23.4	
9.5	55.8	43.9	
10	59.3	30.9	
9.6	6 2.2	35.1	
9.8	3.0	57.7	
9.8	5.8	57.0	
9.0	6.1	9.7	
9.8	18.9	0.3	
9.5	43.5	18.2	
9.5	7 14.0	13.9	
9.4	17.6	31.3	
9.2	24.5	3.1	
8.5	26.4	23.7	A
10	46.6	49.6	
9.7	55.5	11.6	
9.1	8 43.1	4.2	A
9.7	49.6	39.5	
9.4	51.5	50.7	
9.8	54.3	23.9	
neb	9 4.8	29.1	
9.0	5.4	17.4	A
9.2	24.9	13.9	
8.0	31.0	10.7	A
9.5	53.3	18.0	
8.2	59.4	19.3	A
9.1	10 2.7	31.4	
9.8	13.4	23.2	
9.3	15.9	8.8	
9.2	17.3	25.3	A
8.2	22.7	34.0	A
9.2	25.1	0.3	A
9.5	58.2	29.9	
8.1	11 28.3	20.0	A
9.6	58.6	29.5	
9.9	12 27.0	43.0	
9.4	41.3	14.5	
9.5	44.4	50.2	
10	13 13.4	59.9	
9.3	16.9	6.6	A
9.5	19.3	8.8	
9.8	26.2	47.3	
9.6	33.1	27.0	
9.8	35.2	56.5	
8.7	14 1.9	39.4	A
10	5.3	24.2	
9.1	8.8	11.9	A
9.4	11.5	33.3	A

4221—4280

	15h	—20°		
m	m s	′		
9.1	14 14.0	11.1	A	
9.8	41.6	26.2		
9.4	15 14.0	1.9		
8.6	49.2	19.0	A	
9.5	52.7	36.5		
9.0	53.2	12.7		
9.5	16 17.1	30.9		
9.9	24.0	30.0		
9.5	42.2	13.5		
9.5	17 23.8	5.2		
9.8	25.7	4.2		
9.5	40.5	58.8		
7.0	41.6	51.5	A	
9.5	51.9	41.9		
9.7	53.3	22.9		
9.3	18 22.8	41.4		
8.3	43.9	13.7	A	
9.6	45.0	28.2		
7.7	19 55.4	41.2	A	
9.2	56.0	52.4	A	
9.4	20 42.8	1.0		
9.2	59.0	54.5	A	
10	21 28.2	8.9		
9.0	59.6	6.2	A	
9.3	22 4.4	45.0		
6.7	13.5	13.4	A	
9.1	25.7	32.4		
9.5	52.0	17.0		
9.7	23 24.9	10.3		
8.5	33.5	7.4	A	
9.4	34.8	44.4		
9.5	38.0	54.0		
9.7	24 13.0	41.9		
9.7	17.9	45.6		
9.0	17.9	21.6		
9.3	30.9	7.8	A	
9.4	42.5	9.2	A	
9.8	51.9	9.8		
9.4	25 8.9	24.0		
8.5	20.3	3.1	A	
9.8	31.1	17.5		
7.9	44.4	49.1	WZ	
10	57.2	25.5		
9.5	57.3	26.8		
9.0	26 34.8	34.3		
8.4	47.3	31.0	B	
10	52.0	51.9		
9.6	27 11.7	46.0		
9.9	13.2	51.2		
9.9	23.9	47.0		
10	27.4	34.7		
9.8	28.2	31.6		
9.9	31.9	51.2		
9.0	41.8	13.0		
var	50.0	40.8		
9.8	28 1.7	37.3		
9.2	12.6	6.4		
10	17.9	25.0		
8.8	45.6	46.6		
8.8	52.2	55.9	WZ	

4281—4340

	15h	—20°		
m	m s	′		
9.5	29 10.9	34.8		
9.4	16.9	54.5		
9.8	34.4	21.4		
8.8	46.7	52.6		
5.8	51.2	31.9	WZ	
9.5	30 4.1	1.4		
9.3	14.9	18.5		
8.9	35.0	47.9		
8.7	36.0	5.8	A	
9.9	37.3	21.2		
9.2	47.9	45.0		
8.2	31 14.7	32.1	A	
9.8	38.5	54.0		
9.9	51.1	5.1		
9.1	59.2	29.4	A	
9.5	32 10.1	0.2		
9.6	14.1	0.0		
9.1	17.9	42.7	A	
9.6	29.2	49.0		
9.6	58.7	30.9		
9.5	33 16.4	12.3		
10	18.0	48.2		
10	34.1	42.6		
9.3	36.2	2.8		
var	37.0	42.6	A	
9.3	42.0	6.8		
9.1	47.1	50.7	A	
9.1	34 51.3	15.5		
8.4	54.1	39.1	A	
10	35 14.1	43.8		
9.5	17.9	30.7		
10	41.6	26.6		
9.2	36 2.2	28.1		
9.8	31.0	49.6		
9.5	37 24.0	16.5		
9.1	44.7	3.0		
9.7	54.7	40.8		
9.3	55.6	31.2		
9.3	38 19.8	57.0		
9.1	27.8	53.3		
10	45.6	54.2		
7.6	56.4	0.7	B	
7.8	39 4.6	46.4	B	
9.0	25.7	6.9		
9.6	46.0	28.6		
9.7	51.0	0.9		
9.6	40 15.8	40.7		
8.4	19.1	46.1	A	
7.7	30.0	0.0	B	
9.8	41 2.8	4.9		
8.5	9.7	1.4	WZ	
7.5	13.6	19.9	B	
9.3	16.4	13.7		
9.5	38.2	16.1		
8.1	42 4.1	24.2	B	
9.1	6.6	16.0		
9.5	31.2	21.0		
9.0	40.3	31.9	A	
9.7	44.9	20.3		
9.7	50.2	11.9		

4341—4400

	15h	—20°	
m	m s	′	
9.7	42 50.5	29.2	
9.4	43 3.0	33.2	
7.3	3.4	8.5	B
8.8	7.1	28.1	A
10	23.4	31.1	
10	48.4	7.8	
9.5	44 13.2	6.1	
9.7	29.2	20.5	
9.6	34.0	39.0	
9.7	45.1	31.1	
9.8	58.2	15.2	
9.7	45 24.4	22.1	
9.7	40.0	5.7	
9.4	46 8.4	20.4	
8.3	20.8	23.1	A
8.9	36.1	21.5	A
9.4	45.4	15.3	
10	47 7.0	29.7	
8.8	18.3	30.8	
9.2	26.3	12.0	
9.4	44.0	4.7	
8.2	54.4	21.2	A
8.3	48 11.0	0.2	A
6.5	49 12.3	33.5	A
9.9	17.2	27.4	
8.9	58.2	58.8	WZ
9.5	50 1.3	30.8	
7.5	2.1	27.9	A
9.5	10.2	59.0	
8.5	32.1	36.0	A
9.5	32.7	50.2	
9.6	35.8	22.3	
9.8	47.5	5.3	
10	59.2	43.4	
9.1	51 17.2	33.1	A
9.5	32.3	23.1	A
9.3	34.1	16.7	
9.5	52 3.3	11.6	
8.9	8.0	2.3	
7.5	36.4	44.6	A
9.7	38.8	24.2	
9.6	53 12.2	31.0	
9.5	33.6	58.6	
9.0	36.5	20.7	A
9.2	54 1.8	5.4	A
10	4.3	31.1	
9.4	31.7	34.7	
9.4	35.6	3.9	A
9.8	55 54.1	53.2	
8.8	56 5.0	57.2	B
9.0	25.3	29.6	
8.2	27.2	30.3	B
9.7	43.2	11.4	
9.5	54.2	5.1	
9.1	57.9	5.2	
9.0	58.2	10.3	
9.5	57 5.6	35.3	
9.1	9.2	9.1	
7.7	9.8	2.5	B
9.5	15.0	41.2	

4239: 55:21 42′7:7 B_1, Ep. 1871.45 dann um — 10° zu corrigiren wäre?

4317 = var Peters A. N. 102.2434, 15h 38m 5° — 20°40′4, dessen AR. al

4332: 14:23 19′46:9 B_2, Ep. 1873.09

4401—4460					4461—4520					4521—4580					4581—4640					4641—4700				
	15h—16h		−20°			16h		−20°			16h		−20°			16h		−20°			16h—17h		−20°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.5	37	24.2	45.0	A	9.8	10	22.8	7.8		9.4	27	28.5	30.4		9.2	46	26.3	39.7		9.9	58	46.4	35.6	
8.9		24.3	4.9		10		57.0	14.8		10		36.6	20.9		9.8		27.2	16.8		9.5		54.5	2.5	
9.5		50.3	31.7		9.7	11	9.0	53.8		9.1		36.8	24.6		9.5		44.4	27.5		9.5	59	0.2	28.7	
9.1		57.6	50.5		8.0		24.3	25.1	A	9.1		42.9	47.9	A	9.8	47	8.7	50.2		9.5		27.2	13.6	
4.7	58	19.7	16.6	B	9.7		41.2	56.0		9.5	28	2.5	7.8		9.8		9.1	55.7		9.5		30.8	10.8	
9.5		20.5	45.3		9.7		55.4	50.2		9.0		11.6	15.0	A	9.4		12.6	36.2		7.8		57.9	1.4	A
9.1		28.5	54.1		10	12	4.0	48.4		9.2		45.0	4.6		9.5		38.3	12.5		9.5	0	7.7	26.1	
5.0		54.6	27.7	A	9.1		11.3	35.9		9.0		50.0	13.2	A	9.8	48	47.9	47.4		10		24.6	0.4	
8.5		56.5	32.3	B	9.5		26.7	35.9		9.3	29	18.9	36.5		9.1	49	9.3	24.0		9.3		33.3	16.6	
9.5	59	12.6	34.9		9.1		27.7	58.3		10		34.0	26.9		9.0		17.2	58.4		9.3		33.8	34.1	
10		25.5	50.0		9.5		41.8	20.3		9.7		49.4	17.7		9.3		18.2	59.3		9.8		44.8	54.2	
9.2		37.1	23.3	A	9.4		45.9	54.9		9.3	30	2.7	27.7		9.5		20.8	34.1		9.4		49.3	16.3	
9.0		41.6	26.2	A	10		50.2	54.8		9.5		44.4	11.5		9.5		24.1	50.7		8.5		52.2	34.6	B
8.5	0	5.1	21.9	A	10	13	18.2	56.1		9.8	31	34.0	1.0		8.5		51.3	33.6	WZ	9.0	1	9.3	11.5	
9.8		43.5	38.2		10		22.9	10.8		9.7		53.8	44.8		9.8	50	20.0	9.8		7.3		21.7	29.2	B
9.5		53.0	32.7		9.8		25.1	0.8		8.8		58.4	6.5		9.5		41.2	58.8		8.5		30.1	35.7	WZ
8.3	1	5.6	13.4	A	10		41.5	40.5		6.5	32	2.5	7.2	A	9.6		47.4	47.4		9.5		53.6	6.6	
9.4		7.1	26.9		9.4		54.6	41.5		9.7		16.7	2.9		9.7		48.8	29.3		9.8	2	13.2	26.6	
9.8		39.4	48.6		9.8	14	2.9	41.3		9.3	33	1.3	27.3		9.0	51	21.9	52.7	A	7.3		28.1	28.1	B
9.5		41.1	12.0		9.5		10.8	10.2		9.1		11.7	56.6		8.5		59.8	21.8	A	7.8		28.9	38.6	B
9.6	2	8.3	1.3		9.9		13.3	15.6		9.8		40.8	51.3		9.5	52	13.3	22.4		7.5		45.5	14.2	B
9.1		10.0	19.2	A	8.8		38.1	55.9	A	9.2		43.9	11.6		9.5		20.3	13.2		9.5		56.0	3.0	
8.9		29.6	0.7	A	9.1	15	3.3	3.9		9.5		56.3	5.4		9.1		29.1	6.7		10	3	36.1	57.8	
9.3		29.9	54.5		9.8		13.9	6.8		9.8	34	36.6	56.7		9.3		31.6	58.2		9.5		36.2	26.7	
9.4		37.5	19.4		10		31.7	36.1		9.4		56.4	15.5		9.5		37.6	43.6		9.1		42.4	48.6	
9.6		53.5	15.6		9.5		47.6	57.1		9.2	35	0.9	21.7		7.0		40.7	13.1	A	9.5		43.2	35.6	
10	3	3.0	27.3		9.8	16	5.3	19.2		7.5		4.4	25.0	A	9.0		48.8	48.0		9.5		49.7	29.8	
8.7		20.4	41.0	B	9.8	17	0.6	8.2		9.5		17.5	45.7		9.4		55.4	17.5		9.2		50.5	57.9	
9.0		24.6	43.6	B	10		17.2	20.5		9.3		19.8	34.0		9.1		55.7	43.3	A	9.5		53.3	50.3	
9.8		26.4	50.9		9.8		37.8	7.0		9.6		31.8	29.8		9.0	53	12.5	39.6		9.4		57.7	23.7	
9.5		28.2	27.4		9.8	18	27.1	50.5		9.8		41.2	0.3		9.1		25.4	13.9	A	9.5	4	4.2	28.2	
9.8		46.9	47.8		9.1	19	18.6	35.7		9.5		57.5	5.8		7.8		26.3	22.4	A	9.8		13.0	44.3	
9.4	4	10.0	39.1		9.8		32.0	55.8		9.5	36	10.3	11.6		9.5		26.8	17.9		9.2		28.7	5.6	
9.0		12.7	49.1		9.8	20	13.2	55.4		9.6		12.5	0.2		9.0		52.4	59.7		9.7		34.8	46.7	
10		17.4	56.0		9.1		20.1	28.7		9.7		22.6	37.3		8.9	54	14.9	13.4	A	9.7		40.1	47.7	
9.5		17.9	56.7		9.5		41.7	26.4		10		38.5	23.3		9.5		15.5	56.6		8.5		43.7	24.0	A
10		51.0	18.2		9.2		45.0	49.6		9.8	37	11.6	13.2		9.4		57.2	30.9		9.0		46.3	59.2	WZ
9.3		54.1	48.9		9.9	21	37.8	33.8		9.5	38	53.7	21.1		10	55	5.0	38.9		9.5		56.9	0.1	
10		54.8	54.9		9.5		53.4	1.9		9.2	39	27.4	20.5		8.5		12.8	10.6	A	10	5	5.2	46.2	
10	5	5.0	21.7		10		59.6	28.8		9.4		31.8	21.4		9.5		15.1	6.0		10		23.3	17.1	
9.6		19.3	59.5		8.9	22	19.1	30.2	A	8.4		37.8	41.0	A	10		19.1	33.5		9.9		24.1	55.2	
9.5		48.3	59.2		9.9		22.7	59.1		9.2		44.0	54.1		9.3		20.2	40.6		9.8		44.1	26.9	
10		55.8	2.8		9.5	23	10.2	15.5		8.7	40	27.5	11.7	A	8.2		22.8	15.5	A	9.7		56.2	46.6	
6.8		56.9	43.8	A	9.7		15.0	43.3		9.5		28.9	30.3		8.5		38.2	50.3	A	9.4	6	3.5	10.9	
9.5	6	15.3	51.7		9.0		48.7	28.3	A	9.8	41	17.1	22.9		9.7		41.2	37.0		7.8		15.1	47.5	A
9.8		51.8	48.4		8.5		52.8	26.2	A	9.4		39.7	23.5		9.7		58.9	44.8		9.2		16.7	55.5	
9.5	7	51.8	55.5		9.3	24	9.3	40.3		9.5	42	24.3	7.1		6.5	56	10.9	17.2	A	9.5		20.8	58.5	
9.8	8	8.4	13.6		10		21.5	10.3		8.0		33.2	22.3	WZ	9.0		25.2	37.3	A	10		22.3	52.7	
9.8		8.8	38.0		9.0		24.3	0.6		8.5	43	21.6	38.2		9.5		34.3	57.2		9.0		42.9	5.8	B
10		11.3	49.6		10	25	8.5	34.7		9.5		39.0	28.1		9.4		56.7	32.3		8.9		44.1	7.4	B
9.7		17.3	55.1		9.3		13.1	13.7		9.4		41.7	33.7		9.3	57	0.2	48.2		10		50.8	49.3	
9.8		20.6	44.0		9.6		14.3	11.3		6.6	44	51.9	10.0	A	9.5		34.6	4.1		9.8		54.6	30.3	
9.2		22.9	25.3	A	10		18.6	10.4		9.4	45	14.5	52.9		9.5		35.3	23.5		9.6		56.8	33.9	
6.8		26.8	56.2	A	9.5		23.4	39.5		9.5		28.4	21.3		9.8		42.4	9.1		9.3	7	14.5	36.5	
9.5	9	4.6	47.9		9.6		41.1	28.5		9.4		40.3	10.8		9.3		57.7	30.5		9.6		25.7	21.3	
9.6		17.8	50.4		9.5	26	22.8	44.4		10		48.4	48.7		9.4	58	14.1	49.9		9.4		28.2	51.6	
9.5		34.7	58.5		9.4		23.2	35.6		9.4		59.7	45.1		9.1		24.9	13.7		9.5		51.6	1.7	
9.6		35.4	29.4		9.1		39.1	0.7		9.4	46	13.3	23.0		9.8		32.5	3.1		10	8	7.8	37.4	
9.2		47.9	15.1		9.4	27	14.0	10.1		8.6		16.4	33.0	A	9.4		34.8	44.6		9.1		14.9	26.1	
9.3	10	3.2	55.0		9.6		23.8	56.5		8.8		23.3	50.3		9.5		38.3	50.7		9.4		24.0	59.4	

4701—4760				4761—4820				4821—4880				4881—4940				4941—5000			
17h		—20°		17h		—20°		17h		—20°		17h		—20°		17h		—20°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
.8	8 24.2	50.5		9.8	15 34.1	32.0		9.4	28 47.0	0.6		9.7	41 25.4	4.4		9.4	51 32.7	1.5	
.6	38.6	6.2		8.8	16 6.1	17.8	A	9.7	48.7	2.5		9.7	32.2	39.3		9.5	36.4	43.8	
.0	47.8	45.7		9.7	10.2	23.8		8.2	52.4	35.4	B	9.2	49.2	39.3		9.7	40.4	43.5	
.6	9 8.6	2.4		9.7	16.0	13.7		9.3	55.1	9.8		9.5	54.8	25.0		8.0	52 17.5	58.8	WZ
.0	18.4	18.3	A	9.3	26.2	13.7		9.0	29 0.0	56.7		10	56.3	32.4		8.2	26.2	47.2	
.6	20.5	1.4		8.8	47.8	42.8		8.8	12.1	33.9	WC	9.3	42 10.9	6.3		8.8	28.4	30.0	
.5	23.1	46.2		9.0	55.7	11.1		9.8	18.6	45.5		9.0	22.8	12.7		9.0	55.3	39.0	
.2	35.3	50.7		8.8	17 13.5	38.5	WC	9.0	30.4	27.5		8.8	33.5	55.1	WZ	9.8	53 24.1	33.6	
.5	53.2	14.0		9.8	15.1	59.2		9.8	30 1.5	17.5		9.1	35.0	36.1		9.5	46.6	28.5	
.7	54.8	38.4		8.9	18 10.4	36.9		9.0	7.3	51.7		9.5	43 13.6	43.7		9.7	51.7	56.1	
9.3	10 7.6	29.4		8.5	38.1	10.7	A	9.0	9.9	39.0	A	8.5	17.3	23.5	WZ	9.5	55.3	39.3	
9.0	11.2	12.3	A	9.4	38.3	20.3		9.5	31.3	41.7		9.8	17.4	15.0		6.5	58.3	43.9	A
9.2	11.4	20.3		8.0	45.6	23.5	WZ	8.8	39.6	37.4	A	8.8	22.9	8.6		9.5	54 17.6	42.5	
8.7	11.9	28.6	A	9.5	19 3.9	46.1		9.5	40.2	46.2		9.0	24.2	33.3		9.5	22.1	42.7	
8.5	16.9	20.2	A	7.8	37.7	50.1	A	9.6	52.2	49.9		7.5	33.6	2.2	B	9.5	24.6	18.2	
9.5	18.1	18.8		8.5	48.1	14.4	A	9.2	31 1.1	34.5		9.7	39.9	12.6		9.4	26.2	22.1	
9.5	25.2	8.5		9.5	20 4.0	3.0		9.8	23.4	24.3		9.2	40.2	33.4		9.0	30.3	25.6	
9.0	26.9	24.3	A	9.4	24.5	37.9		9.8	29.6	1.3		9.5	51.9	31.3		9.1	35.0	56.2	WZ
9.3	35.6	7.6		10	29.3	4.8		9.4	44.2	41.8		9.6	44 10.7	46.3		9.5	49.9	54.6	
9.3	37.6	26.8		9.8	46.6	23.0		9.2	47.6	40.8		10	21.7	32.2		9.4	53.7	28.1	
9.6	40.4	0.2		9.5	21 3.2	4.5		9.2	57.5	5.0		8.5	23.1	48.5	A	9.0	58.9	50.2	
8.9	40.8	4.3		9.7	55.2	29.2		8.2	32 12.5	46.8	A	9.4	47.8	28.0		9.5	55 4.2	12.5	
9.1	41.3	55.2		10	22 35.0	8.1		9.5	28.0	55.5		9.5	59.3	20.7		10	7.5	48.5	
10	58.8	48.6		8.8	48.3	45.8		9.5	54.0	7.5		10	45 19.9	29.2		9.5	8.8	25.3	
9.8	11 21.6	25.0		8.5	23 23.9	5.5	A	9.8	33 12.5	45.3		9.8	41.8	36.4		9.8	17.3	59.3	
9.8	24.4	56.9		8.5	28.0	27.8	A	9.5	12.7	23.5		9.6	44.6	44.1		9.1	26.9	54.7	
9.8	26.2	30.1		10	35.2	5.2		9.9	54.1	45.8		8.1	46 0.6	59.2	A	9.7	27.7	50.5	
10	28.7	4.6		9.7	24 23.3	44.0		7.9	55.4	1.4	B	9.3	16.5	57.5		9.3	28.5	46.0	
9.4	28.8	13.9		9.7	32.9	46.5		9.7	34 2.4	46.9		8.7	23.3	22.3	A	9.0	35.9	28.1	
9.5	58.6	58.0		8.1	48.0	40.0	A	10	16.1	58.6		9.9	29.3	33.7		9.1	37.4	39.3	
5.0	12 19.2	57.3	L	9.1	51.5	16.0		9.8	16.3	57.4		9.5	41.7	15.6		9.1	40.9	8.3	
9.0	19.3	12.6		9.5	57.8	40.1		9.1	21.7	40.8		9.8	47.4	55.5		9.1	57.4	59.1	
9.8	25.4	3.9		9.2	25 9.5	24.3		9.8	37.5	51.5		9.5	47 0.0	42.2		9.0	57.5	37.3	
9.0	28.2	18.8	A	9.0	16.7	2.4		9.4	41.4	22.5		9.8	0.9	0.4		9.5	56 0.2	47.4	
9.5	29.7	44.1		9.8	24.1	51.6		9.2	51.4	30.7		9.2	33.5	41.6		9.4	1.7	9.5	
9.0	30.4	19.9	A	9.4	35.4	27.8		9.5	35 5.6	58.1		9.8	34.5	19.8		9.0	4.4	56.6	A
9.6	51.2	46.8		8.9	48.2	0.0		9.8	12.3	40.7		9.3	50.9	48.0		8.3	10.2	49.5	A
9.5	52.7	8.5		9.5	52.8	20.0		9.7	19.1	53.9		9.3	52.9	11.1		9.5	13.9	55.7	
9.2	54.3	48.1		9.7	26 0.5	3.3		9.4	22.0	19.1		9.4	55.0	22.3		9.5	21.9	31.8	
8.5	13 4.2	5.1	WZ	9.8	1.5	40.6		9.6	24.3	38.7		9.5	48 2.3	24.5		9.3	40.9	3.3	
9.4	14.7	16.5		9.5	2.0	57.8		9.5	40.9	45.9		9.0	8.8	50.4		9.7	57 2.8	42.0	
7.3	15.1	24.9	A	8.9	3.1	11.0	WZ	9.5	43.4	29.8		8.8	36.2	10.7	WZ	9.1	20.3	33.6	
9.1	17.7	42.8		9.5	3.9	57.0		9.3	36 13.8	27.2		9.5	58.0	21.1		8.9	25.5	57.1	
8.5	26.6	35.8	A	9.6	5.0	0.7		9.4	20.4	42.9		8.5	59.3	36.0	WZ	9.3	37.2	36.7	
9.3	39.0	42.9		9.3	39.3	32.8		8.2	37 4.0	8.9	A	9.4	49 13.2	26.9		9.8	38.1	12.7	
9.3	46.1	59.9	A	9.5	42.6	33.4		9.5	7.7	1.4		9.4	17.6	3.4		9.0	51.2	22.5	
8.5	58.7	40.4	A	9.4	56.6	45.9		9.5	40.9	29.7		8.9	25.3	34.1		8.9	55.4	27.6	A
8.3	14 6.5	5.2	B	9.0	57.1	53.4		9.6	38 5.5	23.6		9.8	42.5	46.3		9.3	58 1.5	8.1	
9.5	10.2	15.4		9.5	59.0	11.1		9.1	21.7	12.5		9.0	50.8	15.2		9.4	13.7	20.4	
8.1	22.0	4.4	B	8.7	27 1.3	42.7	A	9.0	21.8	38.2	B	9.8	50 1.7	5.9		9.3	16.4	56.2	
10	34.7	30.9		9.2	1.9	59.2		9.5	28.9	3.3		9.3	3.8	29.4		9.5	36.7	24.0	
9.2	42.2	5.0		8.9	18.2	10.3	A	9.5	40.4	27.1		9.3	17.5	51.4		9.6	42.9	42.2	
9.8	56.0	54.1		8.5	32.5	15.6	A	9.3	50.4	26.9		9.3	19.5	50.2		9.3	45.6	38.7	
9.6	15 0.1	50.0		8.5	43.6	52.8	B	7.0	52.2	46.8	A	8.0	27.1	2.6	A	9.5	46.1	33.6	
9.7	12.2	33.8		9.9	45.4	36.6		9.1	39 20.2	14.0		9.5	35.9	41.2		9.1	47.2	21.3	A
9.7	16.2	9.8		9.8	52.4	36.3		9.4	45.0	46.1		9.6	51 2.0	3.1		9.1	55.7	26.2	A
9.7	16.9	16.7		9.3	57.6	47.1		9.9	55.7	20.7		9.4	19.1	26.5		9.8	56.9	49.6	
9.5	20.1	22.2		7.9	28 7.2	51.3	B	9.6	40 16.8	18.9		10	20.8	19.5		9.5	57.7	47.2	
9.1	28.4	3.7		9.3	24.9	34.4		8.1	48.1	46.5	B	9.6	22.2	41.5		9.5	59 1.6	28.5	
9.8	30.1	57.3		9.2	25.4	36.6		9.3	41 2.0	44.9		6.5	22.9	19.4	A	9.7	19.5	43.7	

4878: neb GC 4331

5001—5060				5061—5120				5121—5180				5181—5240				5241—5300			
17h—18h		—20°		18h		—20°		18h		—20°		18h		—20°		18h		—20°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	59 36.6	9.2		9.5	7 0.9	43.8		9.5	15 17.8	39.1		9.4	24 58.0	35.4		9.5	34 25.7	28.7	
9.3	38.2	51.6		9.0	2.8	38.3	A	9.4	19.1	47.6		9.5	25 1.7	14.8		9.4	38.4	5.5	
7.8	0 4.6	5.8	A	8.5	5.4	13.5	WZ	9.2	32.2	24.6		10	8.2	34.6		9.0	35 2.7	21.5	
10	7.7	45.5		9.8	17.8	52.1		8.9	36.7	23.7	A	9.1	8.7	22.4	A	8.3	20.0	1.6	M
8.7	13.2	50.1	A	9.2	21.8	3.3		9.3	47.0	56.6		9.0	29.3	23.1	A	9.3	28.7	3.5	
9.0	19.5	38.7	A	9.7	31.3	59.7		9.5	52.1	11.9		9.6	29.9	2.8		9.1	42.2	21.8	WZ
9.1	23.1	2.3		9.5	47.4	13.1		9.2	16 4.0	16.6		9.2	26 1.2	19.4		9.2	49.5	12.9	
9.2	27.7	57.5	A	7.3	57.7	35.1	A	10	8.0	57.5		9.4	7.9	59.1		9.8	36 5.7	17.6	
9.5	41.2	12.9		9.2	8 12.2	35.2		8.5	18.0	51.2	WZ	6.5	42.4	57.3	A	9.8	9.8	45.3	
9.8	48.3	36.6		9.5	19.6	18.3		9.5	19.1	7.1		9.1	43.1	18.2	A	9.1	25.5	59.2	A
8.3	49.7	3.2	A	9.5	23.9	58.2		9.5	22.2	13.4		9.0	50.4	48.5		9.1	28.0	0.5	
9.3	1 1.9	51.3		9.5	33.1	20.0		9.4	32.4	39.5		9.4	54.8	23.6		9.3	32.8	35.8	
9.4	10.6	4.0		10	39.9	26.0		9.9	41.3	9.2		9.4	27 26.9	17.1		8.0	39.9	47.0	A
9.2	34.6	29.3	WZ	10	49.5	28.9		5.4	43.1	36.9	A	9.8	46.0	47.3		9.0	43.5	23.0	
9.5	47.0	55.2	A	9.1	55.2	41.6	A	9.4	44.9	1.0		9.8	28 2.0	35.6		8.7	48.0	55.9	A
10	57.6	3.8		9.7	57.5	33.4		9.5	53.5	52.2		7.3	2.1	25.5	B	9.6	55.0	1.9	
9.5	2 3.1	22.0		9.0	57.9	38.1	A	9.5	17 18.4	38.7		9.0	6.8	26.6	A	9.4	55.3	6.3	
9.0	26.9	54.2	A	9.1	9 15.0	43.0	A	9.7	23.9	49.6		9.5	10.2	0.9		9.5	37 25.7	30.5	
9.2	40.7	12.3		9.4	20.1	17.5		9.3	36.8	42.4		8.5	10.5	17.7	A	9.3	29.1	6.7	
8.5	45.2	43.9	A	9.7	31.5	36.0		9.1	54.2	21.4		9.6	21.0	21.7		9.1	35.4	55.4	A
10	53.8	54.0		9.3	36.5	34.7		9.0	55.0	56.1	A	9.4	26.1	34.1		9.5	51.8	1.1	
10	59.6	7.1		9.5	37.4	17.0		9.5	18 40.2	14.5		9.6	30.0	45.5		9.0	55.7	22.1	M
9.5	3 5.2	30.2		9.1	10 2.5	5.8		9.3	48.7	29.0		9.6	31.5	43.0		9.3	56.9	42.2	
9.0	12.4	36.0	A	9.1	7.6	48.1	A	9.4	19 6.2	12.5		9.2	37.3	9.8	A	8.7	38 21.3	36.8	WZ
9.3	13.7	22.1	A	9.1	13.6	8.5		9.1	17.6	1.5	A	9.5	38.3	11.9		9.0	28.8	32.6	WZ
9.3	19.6	12.1		9.2	28.7	12.0		9.0	26.8	53.6	A	9.6	41.1	40.7		9.4	58.6	33.3	
7.5	19.7	27.0	A	9.8	44.0	57.5		8.7	28.4	52.7	A	9.4	44.9	27.3		8.7	39 3.7	1.0	A
9.7	34.9	43.5		9.5	45.5	3.8		8.9	28.8	47.3		9.5	46.5	5.0		7.0	15.9	25.3	A
10	44.8	49.9		9.6	11 3.3	6.2		9.3	38.7	26.2		9.1	29 2.1	11.2	A	9.6	23.8	57.0	
9.0	4 2.6	29.1	A	9.5	9.2	27.3		10	53.9	44.6		9.8	29.2	9.7		9.6	28.9	35.1	
9.8	8.2	24.9		9.4	17.1	17.9		10	54.9	41.1		9.5	34.3	22.8		10	40 13.0	26.2	
9.4	10.5	9.8		10	35.0	59.3		9.5	55.5	53.2		9.9	39.7	9.0		8.0	14.5	18.4	B
9.0	13.0	34.3	A	10	37.6	14.8		9.0	20 12.2	15.1		9.6	44.6	46.4		9.5	24.1	34.6	
9.3	23.9	43.3		9.2	37.9	25.3		9.5	29.4	43.8		9.3	48.0	18.8		9.5	53.3	48.5	
10	28.1	3.4		9.1	41.8	34.1		9.7	31.9	54.1		9.4	48.2	28.4		9.1	53.8	35.6	
9.6	28.2	25.7		9.4	44.0	26.9		9.3	53.9	17.9		9.5	57.8	27.7		9.5	41 0.3	46.4	
9.2	33.0	25.7		8.0	56.2	16.2	A	9.4	54.0	11.8		9.2	30 15.9	24.1	WZ	5.3	3.3	28.4	A
9.4	33.5	27.4		9.5	12 6.7	30.7		9.5	21 33.3	1.9		9.1	26.7	8.1	A	8.3	12.0	10.0	A
9.5	5 2.6	31.1		9.5	29.1	15.5		9.1	43.2	54.8		9.5	30.1	45.0		9.5	12.8	44.9	
9.5	7.1	7.3		8.7	31.2	20.7	A	7.5	56.3	22.8	A	8.5	35.3	27.5	A	9.5	52.4	1.6	
10	10.0	31.2		9.5	36.5	58.4		9.2	22 1.1	57.1		9.1	31 8.0	51.9		9.2	58.2	59.6	
9.1	25.6	41.0	A	9.5	38.0	54.1		9.8	11.6	52.9		9.2	12.4	59.5		8.8	42 5.3	47.5	
9.4	25.9	20.3		9.8	56.6	13.7		9.2	25.9	2.6		6.5	17.9	11.5	A	9.1	6.6	26.2	
9.4	52.9	30.1		9.1	59.8	7.0	A	9.1	49.8	58.2		8.6	18.1	47.7	A	9.4	9.4	3.8	
9.4	53.4	55.5	A	9.3	13 25.6	16.2		9.2	23 8.4	9.5		9.1	20.7	14.0		9.5	18.5	51.4	
9.5	55.7	20.0		9.5	27.7	36.6		9.5	8.8	54.0		9.4	56.2	26.1		7.8	23.7	27.6	B
9.3	59.1	18.4		9.1	38.2	45.9	A	10	19.9	48.8		9.1	32 0.3	40.9	A	9.1	27.8	18.8	
9.5	6 0.8	4.1		8.7	44.1	7.7	A	9.0	25.5	46.0	A	9.0	13.9	37.6	A	8.3	29.9	27.9	B
9.4	5.8	45.6		9.3	45.7	22.4		8.7	25.6	3.1	M	9.8	33.8	41.8		9.9	41.2	43.9	
9.4	13.2	24.9		9.6	50.2	27.9		9.5	27.4	40.3		10	58.1	55.9		9.5	47.7	23.1	
8.7	22.4	54.5	A	9.4	55.9	33.4		9.8	36.2	7.9		9.5	33 2.2	16.4		9.2	51.4	36.3	
9.5	26.7	32.8		9.6	14 3.0	39.7		9.0	40.8	49.8	A	9.0	20.6	5.7	M	9.8	55.1	56.5	
9.6	29.5	48.8		9.7	7.8	30.1		9.8	24 7.9	56.5		10	23.9	54.3		9.3	43 3.6	41.3	
5.8	33.2	46.1	A	9.8	8.1	26.5		9.5	9.2	19.0		10	28.4	41.9		9.4	5.2	22.0	
6.5	34.9	25.7	A	9.1	28.6	12.7		9.2	18.6	45.3	A	9.5	35.3	50.1		8.2	24.7	32.8	B
9.8	46.5	40.9		9.0	37.3	38.4	A	9.1	20.1	29.1		9.3	39.2	54.1		9.5	26.3	25.3	
9.1	52.2	23.1		10	40.5	52.6		9.7	28.0	21.5		8.7	40.4	39.2	A	8.9	26.7	46.5	
9.4	54.0	56.2	A	8.0	41.7	43.3	A	9.7	43.6	58.6		9.8	41.8	25.4		9.5	28.6	30.0	
9.0	55.2	30.2		9.4	42.9	32.3	M	8.0	52.3	28.2	WZ	9.3	43.1	41.1	A	8.8	28.8	14.5	WZ
9.0	59.7	23.2		9.8	58.4	54.3		9.0	54.5	43.4	A	7.4	49.2	26.2	A	9.8	35.8	19.6	

5134: rothgelb

5301—5360

	18h		—20°	
m	m	s	′	
8.7	43	39.2	29.1	
8.5		40.4	22.3	B
9.7		43.4	42.3	
8.7		51.9	27.7	
9.3		52.0	45.1	
8.3		55.3	8.7	M
9.0		58.9	41.9	
8.5	44	6.2	24.2	
9.3		11.7	5.4	
8.9		16.3	41.2	
9.6		25.3	57.1	
10		31.3	39.8	
9.3		31.7	50.1	
10		54.4	37.4	
9.1	45	10.1	59.9	
8.9		11.0	34.8	WZ
8.9		16.3	7.6	
9.6		17.2	28.2	
9.7		23.8	26.2	
10		40.8	21.8	
8.3		43.4	6.6	A
9.2		55.5	6.3	A
9.3		56.8	7.4	
9.3		57.6	2.0	
10	46	11.7	33.8	
9.0		13.8	1.9	A
9.2		14.5	3.7	
8.7		21.7	28.1	M
8.0		36.2	26.0	B
9.3		43.1	12.6	
10		52.1	52.4	
10		55.8	50.2	
7.8	47	8.2	11.4	A
9.7		27.6	45.0	
10		40.1	34.4	
10	48	16.0	32.8	
9.3		34.1	28.1	
9.0		39.8	27.2	
5.5		44.1	50.4	A
10	49	11.9	8.9	
9.2		20.6	0.6	WZ
9.8		20.7	27.3	
10		30.4	47.4	
7.8		34.6	36.5	A
9.7		44.8	47.1	
9.6		43.2	42.1	
9.7		51.3	23.4	
9.0	50	7.8	50.3	
9.5		11.3	2.1	
10		11.8	39.0	
9.0		33.3	41.9	
9.4		36.4	17.1	
9.3		40.4	16.7	
9.5	51	7.5	54.4	
9.4		8.7	26.5	
9.5		22.8	51.0	
9.2		28.3	59.9	M
8.9		51.5	4.6	A
9.5		54.4	39.4	
9.0	52	2.3	48.8	M

5361—5420

	18h—19h		—20°	
m	m	s	′	
9.2	52	9.7	3.1	A
9.5		13.0	1.8	
9.8		27.4	35.6	
8.9		30.5	5.4	A
9.4		31.4	3.6	A
9.8		36.7	57.5	
9.8		37.4	32.3	
9.8		56.5	50.9	
8.9	53	3.2	1.5	A
9.5		3.9	20.8	
9.5		23.8	55.2	
9.0		28.0	33.5	A
9.4		42.8	29.8	
9.7		47.4	42.4	
9.4		49.0	43.8	
8.8	54	4.5	38.2	A
8.5		7.1	36.5	A
9.0		22.2	0.7	
8.3		29.4	55.8	A
9.7		38.9	45.3	
7.8		58.0	19.7	A
8.9	55	2.8	47.1	A
8.6		16.2	53.2	B
9.5		21.7	0.6	
9.0		22.7	39.0	A
9.5		28.4	58.6	
9.6		42.2	42.4	
8.3		43.0	21.4	A
9.2	56	7.5	43.0	
9.4		9.1	33.7	
9.4		28.2	1.8	
9.4	57	26.0	8.2	
9.3		46.4	49.5	
9.8	58	6.8	45.6	
8.3		26.5	11.9	A
9.9		26.8	39.0	
10		29.2	51.2	
9.0		42.5	44.1	WZ
9.8	59	4.5	43.7	
9.5		16.8	46.8	
9.5		26.1	16.9	
9.0		44.5	30.6	WZ
9.7		50.0	8.1	
9.1		50.7	4.9	
9.4		51.7	30.2	
9.8		57.1	8.8	
8.8	0	14.5	26.4	
8.2		19.1	2.5	A
8.0		27.6	13.5	M
9.0		30.8	24.3	
9.6		55.5	12.2	
9.3	1	4.8	56.1	
8.0		5.2	16.2	M
8.8		7.5	37.9	
6.5		15.7	1.4	A
8.9		17.2	40.8	WZ
9.8		23.7	35.3	
8.2		55.5	53.8	A
9.1	2	2.7	20.4	
9.5		4.8	16.0	

5421—5480

	19h		—20°	
m	m	s	′	
9.5	2	10.7	17.5	
9.4		20.8	11.5	
8.5		23.8	12.7	A
9.8		32.1	16.2	
9.4		32.8	46.7	
9.4		36.1	25.0	
9.3		39.9	56.0	
7.8		44.1	34.6	B
8.9	3	4.3	8.9	A
9.4		7.3	13.2	
9.4		16.0	31.8	
8.3		17.5	36.9	B
9.0		23.4	29.6	
8.9		26.8	11.9	A
9.2		31.7	38.4	
9.5		41.9	0.3	
10		43.7	39.3	
9.0		47.3	10.1	A
9.5		56.0	58.5	
9.6	4	3.8	45.2	
8.5		6.4	27.5	M
9.6		6.4	42.5	
9.5		6.8	17.2	
9.2		13.4	46.6	
9.4		19.3	43.7	
8.3		29.2	25.7	M
9.8		34.3	15.2	
7.9		34.7	39.7	M
9.3		56.7	26.5	
9.7	5	0.2	52.4	
9.1		10.2	26.0	M
9.6		12.0	42.0	
9.5		22.2	0.7	
9.3		29.3	9.7	A
9.5		30.0	22.0	
9.4		31.5	57.9	
9.9		43.5	44.1	
9.5	6	5.0	2.0	
9.1		8.3	9.5	A
9.0		17.3	16.9	A
9.5		19.8	56.9	
9.5		27.0	42.3	
9.5		37.6	49.1	
7.3		54.0	2.2	A
10	7	3.8	56.5	
9.8		4.3	14.0	
9.8		11.6	31.8	
8.4		34.0	42.1	A
9.6		48.7	53.5	
10		57.3	50.7	
9.1	8	12.0	45.2	A
9.6		24.9	50.2	
8.2		36.9	48.1	A
9.0		40.6	57.3	A
9.8		44.6	46.8	
9.1		46.0	58.2	A
9.5		50.6	35.8	
9.5		57.3	10.5	
9.1	9	3.0	13.4	
9.2		4.5	14.3	

5481—5540

	19h		—20°	
m	m	s	′	
9.0	9	23.0	7.4	
9.7		23.2	45.0	
9.5		31.3	32.5	
9.4		34.9	19.6	
9.5		37.1	0.9	
8.3		46.4	41.7	M
9.5	10	7.2	33.0	
9.9		19.7	55.3	
9.5		31.3	57.5	
9.5		31.3	1.6	
9.0		33.7	33.3	
9.1		50.5	12.3	A
9.2		54.1	41.4	A
9.4		55.5	29.3	
9.3	11	15.4	52.9	
9.5		25.0	11.7	
9.1		30.2	30.1	
9.2		34.0	10.3	A
9.4		40.4	6.2	
9.8		50.6	21.5	
9.8	12	17.3	22.1	
9.0		25.7	57.6	WZ
10		32.0	44.7	
9.7		42.1	44.4	
9.8		44.6	33.8	
9.5		46.5	6.7	
9.5		51.4	1.9	
9.2		52.2	9.3	A
9.5	13	8.8	43.7	
9.5		28.2	31.4	
9.1		29.5	48.3	A
9.1		31.2	36.5	
9.8		53.6	40.5	
8.5		58.3	35.0	WZ
9.5	14	4.5	42.2	
7.0		5.6	54.4	A
8.9		10.2	35.5	
9.5		25.5	57.4	
9.0		27.0	7.2	
9.0		38.8	13.9	M
10		52.4	2.4	
10		59.9	11.5	
10	15	4.0	59.2	
9.7		10.7	8.4	
9.0		19.3	29.0	A
9.8		28.7	23.2	
9.8		37.3	21.2	
9.0		39.8	34.1	B
10		59.0	29.7	
8.7	16	1.3	26.1	A
8.3		13.7	52.4	A
9.0		19.2	58.6	A
9.2		19.4	13.7	
9.0		29.1	59.7	A
9.3		33.2	38.5	
9.7		39.1	9.5	
9.4		44.1	31.4	
9.8		55.2	30.8	
9.7		56.4	40.7	
9.5	17	2.7	16.0	

5541—5600

	19h		—20°	
m	m	s	′	
9.3	17	7.4	16.3	
9.5		15.5	33.9	
10		17.6	26.8	
9.8		18.3	9.6	
8.5		19.4	49.8	A
9.5		20.1	30.1	
9.5		28.4	4.4	
9.6		39.9	23.2	
9.1		42.7	52.3	A
9.5		49.8	35.9	
8.2		59.8	52.3	A
9.5	18	13.3	29.1	
9.4		22.4	0.7	
9.4		26.3	59.7	
9.5		31.6	8.5	
8.5		45.5	14.8	WZ
9.0		45.6	56.8	A
9.8		57.5	36.8	
8.2	19	1.9	39.3	A
9.8		27.6	58.1	
8.2		31.8	48.0	A
9.8		37.6	56.8	
9.8		44.2	27.4	
9.6		56.0	18.9	
9.6		59.3	19.1	
9.0	20	15.0	0.8	A
9.8		19.1	43.8	
9.4		20.5	8.9	
9.5		29.7	23.0	
9.5		33.7	37.0	
9.3		35.7	37.2	WZ
9.3		41.7	2.5	A
9.5		57.4	56.4	
9.3	21	13.9	30.7	
9.4		17.2	46.6	
9.1		25.0	39.4	
9.1		43.0	1.0	
10	22	7.1	26.4	
9.8		12.9	16.3	
9.4		28.0	21.6	
9.1		35.0	39.3	
9.8		52.7	7.8	
10		54.1	27.3	
8.8		56.8	43.4	WC
9.5	23	7.1	30.7	
9.1		14.7	2.1	
9.5		22.4	49.9	
9.5		28.4	28.0	
9.8		30.0	58.4	
8.0		33.6	41.8	A
9.5		40.4	27.2	
9.6		44.1	15.1	
9.6		52.9	43.0	
9.0		56.7	0.6	A
9.5		58.9	33.2	
9.7	24	8.8	19.0	
9.8		18.9	53.7	
9.4		25.9	47.6	
9.7		26.8	44.3	
9.5		39.0	23.4	

5601—5660				5661—5720				5721—5780				5781—5840				5841—5900			
	19h	−20°			19h	−20°			19h	−20°			19h—20h	−20°			20h	−20°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	25 5.8	47.5		9.8	33 13.7	0.0		9.5	41 10.9	11.5		8.6	51 17.3	35.8	A	9.5	3 16.9	12.0	
9.8	6.4	34.7		9.8	20.9	38.0		9.0	24.6	33.8	WZ	10	59.3	36.9		9.6	17.2	7.5	
9.2	20.7	2.3	A	9.8	29.5	12.9		9.8	31.9	52.5		10	59.8	38.5		9.4	21.5	58.8	
10	24.0	18.5		9.5	40.0	11.2		9.4	34.2	55.6		7.0	52 3.5	15.0	A	8.5	22.4	38.9	M
9.7	25.1	3.1	A	9.9	51.4	26.0		9.5	43.7	57.5		9.5	23.6	5.8		9.5	25.0	56.8	
9.8	25.8	1.3		9.2	51.7	46.3		9.8	58.6	31.1		9.5	49.0	1.8		9.2	26.4	47.6	
9.7	38.9	48.4		8.9	34 10.7	16.7	A	9.5	42 26.8	22.4		9.2	53 4.1	8.1		9.1	32.3	17.9	B
8.7	49.6	10.2	WZ	9.5	14.0	48.6		9.0	42.4	52.3	WZ	9.5	13.1	55.3		9.5	42.6	19.4	
9.5	50.4	27.5		8.8	15.5	31.9	A	9.1	42.7	33.8		9.5	27.2	1.8		9.4	45.4	40.6	
9.3	26 19.4	29.8		9.5	23.1	49.4		9.8	51.5	35.1		9.5	29.0	9.6		9.5	46.5	46.9	
9.8	25.9	44.4		9.5	26.4	29.5		9.3	53.7	29.3		9.5	32.5	52.5		9.0	4 8.8	52.3	
9.4	30.4	29.1		9.7	30.1	43.3		9.8	56.7	6.5		9.5	54 6.2	38.9		9.0	21.2	11.6	A
9.8	36.1	48.3		9.3	40.9	8.5		9.3	43 0.7	53.5		9.5	34.8	10.3		9.7	32.3	53.2	
8.9	49.0	5.8	A	8.7	51.8	30.2	A	9.5	9.3	13.5		10	38.5	25.2		9.5	41.8	39.6	
9.7	54.8	31.6		9.5	55.5	30.4		8.2	23.0	3.9	B	9.8	55 3.5	29.6		9.4	45.4	45.1	
9.2	27 10.4	5.3	A	9.5	58.0	14.3		9.5	27.7	45.2		9.5	8.5	18.4		8.3	57.6	19.0	A
9.4	16.9	39.9		10	35 5.0	57.2		9.8	32.6	37.4		9.5	43.9	43.6		9.7	5 10.0	50.9	
8.5	41.5	22.8	A	9.5	24.5	29.3		9.5	36.3	20.4		9.1	47.6	49.7		9.7	10.4	34.1	
9.1	28 19.0	22.6	A	9.1	44.3	34.6	WZ	8.9	42.7	36.5	M	9.5	58.0	51.2		9.2	30.1	38.8	A
9.2	26.4	31.1	A	9.3	46.1	5.0		9.6	43.7	5.0		9.5	59.2	31.4		9.7	31.3	39.1	
9.4	29.9	29.8		9.3	56.3	22.0		9.4	47.9	43.3		9.5	56 3.0	39.2		9.5	34.9	15.0	
9.5	37.1	53.8		9.6	36 1.8	1.8		9.0	58.0	14.8		9.5	10.6	39.8		8.5	43.8	40.1	A
8.2	38.9	41.4	A	9.5	7.6	49.4		8.8	44 9.6	19.5	B	8.5	16.6	56.1	M	9.2	6 12.3	5.0	
9.5	39.5	27.3		9.3	11.2	48.9		9.5	26.4	16.0		9.5	45.4	12.1		10	24.9	9.5	
9.5	46.0	14.0		9.5	12.7	46.2		10	35.0	52.2		9.5	49.5	14.4		9.4	39.1	25.5	WZ
10	29 9.9	47.8		9.3	14.8	46.8		9.5	36.7	26.6		9.8	57 8.2	38.1		9.0	55.6	55.6	M
9.8	16.8	5.5		10	16.6	8.4		9.0	50.5	6.8		9.5	17.8	5.0		9.4	7 5.7	0.5	
9.4	19.1	41.1		10	21.4	52.1		9.5	53.4	13.1		8.8	21.2	56.9	A	9.4	31.0	52.8	
9.5	23.6	50.5		9.8	28.6	34.5		9.6	45 1.0	43.8		9.5	23.8	3.5		10	48.7	59.1	
9.5	34.8	38.0		9.3	29.5	16.2		9.5	3.8	23.8		9.3	42.0	18.8		7.8	49.0	27.6	A
9.5	43.7	30.4		10	47.2	26.9		9.8	5.9	37.3		9.5	43.3	31.9		9.6	51.6	22.0	
9.5	47.0	11.1		9.5	53.6	59.2		9.0	12.9	44.3	A	9.3	54.0	19.5		9.5	56.1	47.4	
9.0	54.5	51.8	A	9.7	37 11.4	49.7		9.4	20.2	45.6		10	56.3	32.4		9.3	8 0.8	10.8	
9.5	55.3	20.7		10	16.2	30.0		9.6	42.8	52.3		8.5	58 0.7	33.4	M	8.7	5.2	31.4	A
9.5	59.0	44.6		9.5	16.5	18.6		9.8	56.0	43.2		9.0	7.1	11.3		9.2	12.1	37.3	WZ
9.0	59.9	37.4	A	10	16.5	58.2		9.0	46 15.7	28.3	A	9.0	20.7	58.1	A	9.5	20.8	45.5	
9.5	30 4.5	29.0		9.5	41.8	19.7		9.5	25.0	50.0		9.5	59 8.3	50.8		9.4	38.8	9.5	
9.0	31.1	22.6	A	5.0	54.4	6.3	A	9.5	25.9	39.3		9.6	14.6	24.7		10	43.5	31.0	
9.5	42.3	51.0		9.8	55.5	12.4		8.3	40.6	42.9	M	9.0	18.1	17.1		10	43.9	33.7	
9.8	31 6.5	36.6		9.0	55.6	30.9	WZ	9.5	54.4	22.5		8.3	19.4	11.7	M	7.8	51.2	24.3	A
9.5	25.2	15.6		9.3	38 2.7	55.5		9.5	59.3	18.0		10	25.1	48.8		9.3	58.5	51.5	
8.0	31.2	20.5	A	9.1	10.3	11.3		9.1	47 19.2	31.5		9.4	29.7	12.4		9.6	9 4.2	31.9	
9.2	32.3	7.7		8.8	32.3	10.2		9.7	24.0	43.7		10	57.7	19.8		9.3	8.7	30.4	
7.8	37.6	52.0	A	9.5	36.6	53.9		9.5	25.7	14.6		9.5	0 0.2	48.4		9.2	21.8	13.5	A
9.5	45.9	46.0		8.3	38.3	14.0	A	8.8	30.9	52.2	A	9.5	1.4	9.8		10	10 5.0	46.8	
9.7	48.6	5.3		9.5	42.6	54.4		9.5	38.5	54.2		9.5	13.2	21.6		8.7	11.4	8.4	A
9.4	49.1	24.7		9.2	48.4	8.4		9.6	53.8	50.2		9.4	25.8	10.1		8.9	54.8	1.3	A
9.9	59.3	25.8		8.9	53.6	13.3		8.5	48 12.6	51.4	A	9.5	46.4	23.3		9.4	55.7	25.6	
10	32 6.9	40.6		9.4	54.6	27.9		9.7	15.6	50.3		9.8	1 3.6	47.8		8.1	11 9.2	21.8	WZ
9.6	14.1	11.7		9.8	39 6.0	44.8		8.8	29.5	58.0	A	9.1	16.6	46.8		9.3	12.0	20.1	
9.8	27.9	29.9		9.5	12.6	17.6		9.5	58.8	9.4		9.0	38.1	48.8	M	9.7	12.3	39.4	
8.8	30.1	22.2		10	16.8	0.6		9.7	49 2.2	41.6		9.2	39.5	3.9		9.6	17.8	17.9	
9.0	32.7	44.0		10	17.5	14.9		9.0	12.0	17.2		8.8	55.9	54.0	M	9.5	21.2	53.0	
9.2	38.4	6.9		9.3	20.3	7.8		9.5	30.0	19.7		9.8	2 33.6	20.5		9.7	28.8	3.5	
8.5	39.6	41.5	A	9.6	40 4.1	25.7		9.5	58.4	25.4		9.5	38.0	25.4		8.8	30.8	21.4	WZ
9.4	41.1	28.2		9.5	15.1	38.0		8.3	50 11.5	19.2	A	7.3	43.9	40.9	M	8.8	41.9	42.5	
9.3	47.3	9.0		9.7	17.0	42.4		8.3	32.3	28.4	A	9.1	48.1	4.4	A	10	59.7	44.9	
8.5	58.1	25.3	WZ	9.8	28.5	46.3		9.8	35.3	21.0		9.4	56.0	34.1		9.4	12 0.4	52.9	
9.5	59.7	20.3		9.2	36.7	21.9		9.3	51 1.7	32.9		8.5	3 8.4	38.6	M	8.7	2.1	25.3	WZ
9.0	33 0.2	1.8	A	9.8	45.0	40.9		9.4	9.4	46.7		9.3	13.5	34.5		9.3	3.5	59.2	

5901—5960					5961—6020					6021—6080					6081—6140					6141—6200				
	20h		—20°			20h		—20°			20h		—20°			20h—21h		—20°			21h		—20°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
7.5	12	4.9	5.9	A	9.3	23	30.4	22.7		9.8	36	10.5	19.9		8.5	49	38.2	37.4	M	9.8	1	3.3	35.8	
9.8		9.5	6.0		9.5	24	5.8	2.5		9.5		49.0	53.0		9.0		41.7	21.1		9.7		11.1	2.9	
9.5		32.6	57.3		9.0		11.9	26.9	A	9.0		55.0	55.1	WZ	9.7		52.5	3.7		9.5		21.2	59.3	
9.7		33.3	3.3		9.2		13.5	36.5		9.1	37	47.4	38.7		9.8		57.4	55.6		10		23.2	6.9	
9.0		33.7	6.0	A	9.4		17.1	3.9		9.1	38	2.1	50.6		10	50	18.5	22.5		9.2	2	43.2	24.3	
10		57.8	22.5		9.0		24.0	33.2	A	9.2		15.4	11.4		9.0		20.8	41.7		10		51.0	46.6	
9.6	13	1.3	55.1		9.4		29.2	34.3		9.0		19.5	33.3	WZ	9.0		24.9	52.1	WZ	9.2		52.6	47.6	
9.5		13.6	37.1		9.3		29.2	7.3		9.8		20.2	36.1		9.5		35.7	12.6		9.8	3	32.3	7.2	
9.4		44.7	31.7		9.2		55.1	32.7		9.8		32.6	8.8		9.8		55.5	25.1		9.6		37.2	29.7	
9.3		54.6	39.5		9.1	25	17.6	54.6		9.1		34.4	39.1	WZ	7.8	51	5.0	59.8	A	10		46.4	46.0	
9.1		57.0	41.2	A	9.9		32.2	40.6		9.8		46.4	21.9		10		8.0	53.8		7.3		47.3	55.3	A
9.5	14	1.3	45.4		9.6	26	5.9	0.8		10	39	3.4	27.4		9.6		13.9	5.5		10	4	21.2	21.0	
8.5		3.1	14.2	M	9.2		8.6	36.8	WZ	9.9		4.4	13.5		8.8		40.8	10.0		9.5		22.3	15.0	
9.6		10.9	52.6		9.8		26.7	56.1		9.8		9.4	18.4		8.8		45.3	32.3	A	9.5		38.5	45.7	
9.8		12.4	19.5		9.4		41.5	38.4	WZ	10		10.4	24.7		9.5	52	0.4	38.1		9.5		43.4	9.5	
9.7		29.1	46.9		9.4		48.1	54.2		9.1		13.9	0.7		8.3		37.6	28.7	A	9.5		44.4	18.9	
8.5	15	4.4	59.0	A	9.4		52.2	59.4		8.8	40	24.8	0.9	A	9.8		56.9	15.9		9.5		56.4	3.3	
9.4		12.7	20.6		10	27	1.0	34.2		9.5		32.9	22.8		10	53	16.1	52.6		9.6	5	0.6	46.6	
8.9		23.7	22.2	WZ	10		29.2	10.4		10		41.4	10.3		10		25.0	0.8		7.3		42.6	41.2	B
9.0		27.4	41.7	A	9.6		46.7	48.0		9.5		43.4	23.0		9.1		38.7	5.7		9.5		51.4	53.5	
9.5		28.0	59.2		9.8	28	20.3	26.5		10	41	12.0	36.2		9.3		58.5	9.0		9.5	6	6.4	9.5	
9.5		34.9	0.2		9.5		20.6	39.7		9.8		27.6	32.9		8.5		59.5	53.7	M	9.6		10.3	41.4	
9.2		40.2	14.2		9.5		21.2	33.1		8.8		41.0	15.0	WZ	9.5	54	9.0	59.3		10		28.0	36.3	
9.1		41.0	29.6	B	9.0		21.6	19.0	A	9.7		43.4	42.6		9.0		16.5	59.8	WZ	10		28.4	20.2	
9.0	16	23.2	10.4		9.1		55.1	31.8		9.4		59.5	8.5		9.0		41.0	12.7		7.0		41.9	40.2	A
8.7		33.3	28.0	A	8.5	29	0.9	21.0	A	9.0	42	11.0	13.3		9.4		46.9	49.0		9.8	7	21.9	11.9	
9.8	17	7.9	8.6		9.3		5.6	8.9		9.1		13.0	5.9		9.3		51.6	53.3		9.9		55.4	47.4	
9.2		16.8	53.9		9.9		24.1	50.6		9.0		48.5	7.9	A	8.3	55	4.1	17.5	A	10		57.3	53.5	
10		27.9	54.8		9.4		28.7	34.2		9.7		56.2	41.4		10		12.1	9.6		9.2	8	16.0	11.4	
9.2		33.2	10.9	A	9.6		44.6	27.7		9.3	43	27.1	55.3		9.7		25.3	43.1		7.3		25.8	46.5	A
9.1		38.4	55.7		9.0		56.3	3.8	A	9.0		27.4	48.7	WZ	9.8		27.0	18.5		9.8		41.7	28.8	
10	18	30.3	39.0		9.5	30	15.2	36.9		9.8		33.8	11.0		8.3		34.8	10.9	A	9.0		46.8	4.1	
9.6		37.9	51.7		9.5		15.5	50.0		8.8		40.0	23.1	WZ	9.1		47.6	14.1	A	8.3	9	0.0	6.2	B
9.5		38.6	54.0		9.9		45.6	4.9		9.5		56.3	13.4		9.5	56	7.6	5.7		9.8		5.6	36.8	
8.7		40.8	0.7	A	8.7	31	12.3	10.9	A	7.0		58.3	10.6	A	5.0		8.3	25.1	A	8.3		6.0	23.6	A
9.0		42.1	19.5	A	9.0		14.0	35.4	WZ	8.6	44	10.3	4.4	A	9.5		19.0	37.4		9.4	10	6.5	31.3	
9.4		43.8	12.5		9.8		26.9	10.4		9.4		19.2	6.0	A	9.5		46.0	35.9		9.5		9.8	15.4	
9.4		54.1	4.1		9.5		27.7	39.4		9.2		20.0	15.8		8.3		58.0	41.1	M	6.8		12.5	56.1	B
9.9		55.3	9.6		9.6		29.9	40.9		9.8		20.8	26.4		9.5	57	0.5	24.1		9.0		25.5	59.1	
9.5		58.5	54.0		10		52.4	55.8		10		45.6	46.2		9.4		2.6	55.5		9.2		31.6	39.6	
8.5	19	38.5	46.6	M	9.5	32	10.3	54.7		9.5	45	18.1	10.4		9.4		11.3	46.6		9.2		41.3	20.5	A
8.8		56.3	50.2	A	9.4		18.9	40.2		9.0		18.1	18.5	WZ	10		23.0	15.9		8.2		52.8	42.8	B
9.5	20	4.2	0.2		10	33	5.1	42.7		9.4		46.7	40.0		9.3		25.9	32.2		10	11	33.1	31.1	
10		15.4	30.3		10		36.5	53.0		8.9		48.1	19.3		9.2		32.8	3.4		9.5		52.1	32.9	
9.0		15.8	9.8	WZ	9.5		38.7	20.2		9.5		53.7	37.0		9.8		50.6	45.3		9.0	12	2.8	26.2	B
9.4		44.8	11.9		10		54.2	43.6		9.4	46	9.8	41.9		10		53.2	20.0		9.6		39.6	11.0	
9.9		49.3	11.9		9.8	34	1.8	45.4		9.5		42.1	18.8		6.8	58	25.1	45.2	A	9.5		41.6	15.5	
9.4		55.8	46.6		9.1		28.7	31.8	WZ	9.8		46.6	30.2		9.0		35.2	16.8	WZ	9.8		42.5	29.8	
9.2	21	28.9	1.6		10		29.6	26.2		9.4	47	7.0	49.5		8.5		45.1	38.4	A	9.8		59.6	35.8	
9.9		31.0	49.2		9.4		30.4	44.9		8.8		20.6	22.1	M	9.6		48.2	48.1		9.1	13	5.1	5.9	
9.5		37.0	50.4		8.7		37.8	0.2	B	9.7		54.9	44.4		9.1	59	0.9	3.6	WZ	9.0		10.3	28.2	A
9.8		40.4	13.4		8.7		44.0	44.7	M	9.6		58.4	44.6		9.8		33.6	12.5		8.5		10.6	8.8	M
9.8		49.7	13.5		10		48.3	40.5		9.1	48	0.8	7.8		8.5		34.4	36.7	A	9.2		16.4	41.8	
8.8		54.4	13.4		9.2		57.5	0.2		9.4		2.9	54.6		9.5		42.6	30.9		9.5		16.4	58.0	
9.0		57.9	45.4	WZ	10	35	32.3	13.2		9.8		4.6	56.3		9.5		53.1	18.2		9.0		52.2	32.9	A
8.8	22	9.9	23.8	WZ	9.7		37.8	28.8		9.2		31.5	35.2	WZ	9.3		54.5	0.5		9.4	14	26.9	47.2	
9.2		58.9	16.9	M	9.8		42.6	54.8		9.6		44.7	12.0		9.4		56.6	26.0		9.8		27.9	34.2	
9.8	23	1.5	31.2		9.4		50.0	43.7		9.7		54.9	6.8		9.4	0	28.7	34.1		9.6		32.9	49.5	
9.3		15.1	54.4		9.3	36	0.6	53.9		9.0	49	17.3	35.5	WZ	10		43.3	49.6		9.5		34.7	27.8	
10		17.2	0.8		9.5		9.4	42.6		10		20.0	11.2		7.0		59.1	46.4	B	9.4		52.2	16.5	

6201—6260				6261—6320				6321—6380				6381—6440				6441—6500			
	21h	−20°			21h	−20°			21h—22h	−20°			22h	−20°			23h	−20°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
10	14 53.5	53.7		10	31 55.8	0.5		8.8	47 32.2	5.6	A	9.5	5 2.3	30.8		9.8	22 42.5	58.2	
9.5	15 0.2	33.1		9.5	32 51.1	24.0		9.4	41.2	46.2		9.4	6.9	20.4		9.2	23 18.8	13.6	R
9.8	3.7	20.9		9.4	33 4.8	59.6		9.4	48 18.4	9.7		9.8	18.8	33.1		9.1	37.0	48.8	
8.5	9.2	17.7	B	9.3	4.8	19.9		9.0	24.3	8.0	A	9.3	22.7	52.1		9.6	24 30.6	40.2	
8.5	56.8	14.2	A	9.8	29.7	3.7		9.1	25.2	20.2	WZ	9.3	27.9	17.7		10	54.3	21.7	
8.5	16 1.9	24.2	M	7.5	38.2	27.5	A	9.0	29.8	42.8	WZ	9.8	29.4	5.4		8.3	25 15.8	7.9	A
9.5	28.2	51.9		9.7	46.7	1.0		9.8	49 9.9	18.1		9.9	53.8	31.3		9.1	18.8	46.9	
9.0	28.3	13.1	A	9.4	34 44.7	2.0		9.7	51.1	56.6		9.8	6 25.3	47.2		9.2	27.6	0.4	A
9.9	17 22.2	38.4		9.4	53.8	23.2	WZ	10	50 4.1	14.0		9.9	38.0	20.2		9.8	40.1	36.8	
9.3	19 3.3	36.8		6.5	35 6.6	16.7	B	9.1	23.0	4.5	A	9.6	44.5	15.2		8.7	26 16.2	6.4	A
7.6	17.7	50.2	A	9.5	7.5	23.5		9.3	39.3	30.9		9.7	59.0	14.3		9.4	17.9	16.7	
8.4	19.0	53.5	B	9.5	8.0	28.1		8.5	48.1	17.9	B	8.7	7 5.9	36.4	B	9.8	30.3	16.9	
9.8	30.8	8.0		10	9.9	2.0		9.5	51 2.6	58.6		9.0	13.6	23.4	A	10	40.4	21.6	
8.9	41.2	38.8		9.9	29.6	7.7		8.8	5.3	0.7	A	8.9	36.0	21.5	A	8.5	49.2	36.3	A
9.8	43.9	21.1		9.8	31.2	37.3		9.3	9.4	39.3	WC	9.8	49.4	30.4		9.7	27 46.5	51.6	
8.2	20 55.4	10.1	M	9.5	46.0	0.2		8.7	15.1	41.8	R	9.0	8 12.6	41.6	A	9.8	57.7	59.9	
9.1	21 1.2	2.5		8.6	55.4	10.1	A	9.1	16.5	26.2		9.1	19.6	44.5	A	9.8	28 40.3	25.4	
9.5	4.2	13.4		9.0	56.1	36.0	WZ	9.7	24.6	13.3		9.5	23.6	14.8	A	9.9	29 5.4	8.4	
8.3	22.3	23.7	M	9.0	36 26.5	11.4	A	9.4	30.5	9.7		8.2	24.0	22.8	A	9.8	48.3	44.8	
9.4	22 27.3	9.8		9.5	35.4	0.2		9.6	53 3.0	29.1		9.8	38.1	49.5		9.8	30 27.4	45.6	
9.4	56.2	9.3		9.4	35.7	15.2		8.7	13.4	0.4	A	7.7	54.7	44.4	A	9.6	31 46.1	8.4	
9.1	23 34.4	47.6	WZ	9.5	56.8	26.8		9.8	54 9.2	44.9		9.3	9 25.6	7.5		9.1	53.9	25.8	
9.5	34.9	30.0		9.0	57.5	46.5	A	9.5	24.6	12.2		9.5	42.9	53.7		9.0	54.5	27.1	WZ
9.8	38.5	11.6		10	37 0.0	7.0		9.4	32.0	20.8		9.4	10 32.3	20.2		9.4	32 11.0	23.2	
9.5	39.3	29.3		10	27.7	19.7		9.5	38.2	4.9		8.6	35.5	58.9	B	8.5	15.8	45.7	WZ
10	53.9	48.2		9.5	50.4	26.0		9.8	56.7	9.6		8.4	50.5	56.9	B	9.4	27.5	27.6	
9.3	24 6.5	18.6		9.8	59.3	23.7		8.9	55 9.5	48.6	A	10	11 22.2	17.1		9.9	52.5	32.3	
9.5	34.6	41.0		10	38 28.9	1.3		9.4	12.6	33.5		9.2	48.2	12.6		9.5	54.5	34.3	
10	40.9	4.6		9.8	33.7	19.5		9.7	22.5	2.4		8.7	12 54.2	39.6	A	10	33 5.5	44.0	
8.7	53.5	55.4	A	9.5	48.0	28.0		9.5	33.3	40.0		9.8	13 42.9	47.4		9.1	24.6	57.2	
9.6	53.6	26.6		9.7	39 0.7	47.3		9.5	56 57.1	35.9		7.3	14 4.3	9.7	A	9.4	35 9.7	6.7	
9.2	56.2	42.5	WZ	9.2	23.1	16.5		9.3	57 6.8	4.0		10	22.2	28.0		10	14.0	44.1	
9.5	57.3	43.0		7.5	36.0	14.5	R	9.8	12.2	40.4		8.3	24.1	54.3	WZ	8.5	43.4	6.5	A
9.3	25 22.0	18.4		9.8	58.6	54.6		9.7	36.3	49.6		8.7	43.8	4.6	A	9.5	36 11.8	38.1	
10	26.6	0.3		8.9	40 36.3	5.1	A	10	42.9	43.0		9.8	15 35.5	49.8		8.0	23.6	6.5	A
9.7	41.8	42.8		9.1	48.1	20.2	A	8.2	50.1	28.5	B	8.9	36.5	25.7	A	9.8	23.8	16.2	
6.2	26 42.2	43.7	L	9.0	56.6	49.2	M	9.3	58 11.2	11.5		9.5	36.5	52.1		8.8	46.7	3.1	A
7.5	45.1	53.5	L	9.6	41 21.1	7.6		9.4	49.3	19.1		9.5	16 15.9	0.6		9.5	37 3.1	51.8	
8.6	52.9	28.4		9.8	39.7	39.6		9.4	55.7	5.4		9.6	22.9	16.2		9.5	53.3	16.3	
9.5	52.9	38.3		9.8	54.0	28.0		9.3	59 3.5	34.2		9.1	49.6	19.1	A	9.8	38 5.3	15.6	
9.4	56.0	47.5		9.1	42 27.6	23.3	A	9.3	20.4	50.7		9.8	17 25.4	19.8		9.6	38.3	32.1	
9.7	57.0	59.7		8.0	50.7	51.7	A	7.3	25.9	16.1	B	9.1	25.7	45.9	A	10	53.0	47.4	
9.2	27 5.5	51.5		8.7	43 11.5	31.8	A	9.6	30.3	14.8		7.3	51.0	58.3	A	8.8	39 3.1	40.1	WZ
9.0	8.4	32.3		9.2	34.4	48.3		9.0	44.8	24.0	A	9.3	18 1.8	58.2	A	9.8	6.3	34.0	
9.5	28.0	25.7		10	57.2	22.5		10	0 4.4	11.0		9.1	19.6	0.5		9.2	13.8	4.8	
9.9	39.8	44.9		9.6	44 23.4	4.6		9.8	25.8	35.5		9.7	19 4.0	0.9		5.4	45.4	22.0	L
9.4	28 3.5	32.5	WZ	9.1	30.6	29.7	WZ	8.9	1 41.1	35.5		8.5	8.5	4.6	A	8.5	40 31.4	27.7	B
9.6	11.6	10.8		8.2	36.3	11.8	B	9.7	57.5	42.2		9.0	15.7	0.1		9.7	47.3	15.9	
9.6	17.5	36.0		9.6	44.1	31.0		8.8	57.7	36.9		10	17.9	53.9		9.7	41 21.7	44.4	
9.5	40.7	5.5		9.0	46.4	41.9	A	8.8	2 16.2	43.6		8.7	18.4	10.4	A	9.6	37.2	26.7	
4.7	57.4	6.6	L	9.5	45 15.2	22.1		9.0	47.6	52.5		9.4	24.9	36.0		9.7	42 19.5	3.1	
9.9	58.6	23.3		9.5	39.0	15.8		9.3	53.3	14.5		9.5	43.0	25.5		9.6	43 9.1	47.4	
9.4	29 0.9	5.7		8.1	42.1	41.4	A	9.4	3 5.4	43.7		9.8	52.3	52.3		9.7	28.8	15.5	
9.4	14.2	10.9		9.8	46.3	13.5		10	33.3	14.5		9.8	20 6.0	42.3		9.9	34.6	40.2	
9.8	22.1	34.2		9.3	46 9.8	41.8		9.8	4 9.7	34.5		9.6	19.4	55.4		8.3	44 0.0	14.1	A
8.9	34.7	16.0	WZ	9.6	23.5	50.2		9.8	10.6	51.2		9.1	30.9	51.2		9.7	36.2	28.0	
7.5	30 42.0	16.3	B	10	27.4	54.2		9.1	34.7	49.8		9.5	58.5	37.3		8.7	49.0	50.0	WZ
10	31 17.7	29.4		9.6	31.5	59.8		10	35.5	45.4		9.8	21 38.7	19.6		9.6	45 3.6	31.5	
9.4	45.2	23.7		8.5	47 15.8	19.3	R	9.0	44.2	49.5		9.0	48.1	28.4		9.5	21.3	49.0	
9.1	49.8	52.9	A	9.5	22.7	35.5		9.4	50.6	23.9		8.9	56.6	38.7	WZ	9.0	35.9	50.2	A

6501—6540

m	22h m	s	—20° ′	
9.8	45	43.8	51.2	
9.1		49.6	18.7	
9.4	46	55.8	43.9	
8.6	47	10.5	4.8	A
10		26.5	17.7	
10		27.4	16.4	
6.3		42.9	54.7	B
9.2	48	15.1	26.4	
9.7		28.6	51.2	
9.7		44.7	22.2	
8.0	49	23.8	19.3	B
9.9	50	0.9	28.2	
8.5		10.7	36.3	
9.9		35.0	28.2	
9.7	51	27.5	48.4	
9.8		34.2	49.4	
10		55.4	18.3	
10	52	23.8	26.3	
9.0		44.8	24.1	A
9.9		46.6	6.0	
9.1		50.2	40.6	
9.3	53	7.9	47.5	
7.7		10.4	7.3	A
10		39.3	37.7	
9.1	54	7.2	59.1	WC
8.6		24.0	12.8	A
9.2		47.4	29.9	
10		48.3	10.6	
9.6		57.5	45.6	
8.8	55	3.6	9.3	A
9.9		28.1	6.5	
8.9		37.6	53.4	
8.5		40.4	5.4	A
9.1		41.1	15.3	A
9.2		42.2	34.2	
9.5	56	2.5	53.8	
9.8		34.6	25.0	
9.5	57	3.0	24.5	
9.3	58	17.4	40.2	
9.8		45.5	7.5	

6541—6580

m	22h—23h m	s	—20° ′	
7.8	58	55.2	14.2	WZ
9.8	59	0.2	43.7	
8.3		12.6	39.3	WZ
9.7		56.4	41.3	
9.5	0	27.2	50.3	
9.4		39.1	51.8	
9.4	1	57.1	51.3	
9.5		57.3	32.6	
9.2	2	37.9	15.0	WC
9.5		56.7	53.8	
9.3	3	54.6	50.0	
9.3	4	55.5	20.4	
9.9		56.4	26.2	
9.2	5	18.0	3.5	
9.7	6	13.7	0.1	
9.4		25.4	2.7	
7.0		26.5	28.6	WC
9.7		33.0	26.0	
9.8		45.4	56.2	
8.2		53.3	48.2	WZ
9.4	7	5.0	49.3	
9.5		19.6	7.9	
8.8		30.5	56.8	WZ
9.5		58.0	56.9	
9.8	8	18.9	12.2	
9.1		20.1	31.4	WZ
10		40.0	32.0	
8.6		57.4	44.6	WZ
9.4	9	45.3	10.8	
9.4	10	18.1	58.0	
9.8		35.7	33.8	
9.3		45.6	37.0	
10	11	14.4	6.1	
9.5		15.4	2.6	
9.8	12	18.5	2.1	
9.2		37.2	21.5	
9.8		42.8	43.2	
8.4		46.5	49.2	A
10	13	1.6	44.1	
9.0		9.0	2.0	WZ

6581—6620

m	23h m	s	—20° ′	
9.5	13	43.9	35.4	
9.2	14	41.8	42.8	A
9.7		45.9	57.2	
9.5		53.8	52.7	
8.3	15	6.0	28.8	WZ
9.8		13.1	9.1	
4.5		20.9	53.5	A
9.9		56.5	17.0	
9.0	16	57.6	7.1	
9.7		58.1	41.3	
9.8	17	12.3	18.3	
8.3	18	31.7	9.9	A
9.2		58.4	35.2	
10	19	8.0	20.7	
9.8		11.3	2.2	
9.6	20	2.4	41.1	
9.3		6.2	41.4	WZ
9.3		17.3	10.6	
8.7		18.0	30.5	WZ
9.6		38.6	58.0	
9.0		50.1	57.4	A
9.5		57.2	18.2	
9.0	21	12.7	10.4	
9.3		14.2	57.8	
9.3		37.2	20.6	
8.7	22	29.1	58.0	A
10	23	2.5	45.3	
8.6		25.9	17.4	A
9.9	24	21.7	17.1	
9.5		37.7	43.4	
9.7	25	7.2	37.6	
8.8		23.3	30.3	
8.0		30.2	53.2	A
9.3		39.3	35.7	
9.8		43.2	48.6	
8.8	26	2.8	55.1	A
8.8	27	2.3	58.2	A
9.5	28	12.6	14.5	
9.2		19.2	51.0	WZ
10		30.5	41.8	

6621—6660

m	23h m	s	—20° ′	
9.8	29	36.3	7.4	
9.0	30	15.5	25.5	WZ
10		20.0	21.5	
9.8		31.5	2.2	
9.9		33.7	19.5	
9.4		35.9	21.5	
9.6		53.8	7.0	
9.8	31	27.6	20.4	
9.4	32	27.7	15.3	
9.2		38.5	31.5	WZ
9.7	33	5.0	52.0	
10		12.8	22.2	
9.0		50.6	53.1	B
10		58.1	54.9	
8.0	34	12.5	58.4	B
7.8		13.4	33.5	A
8.5		24.5	12.3	
9.8		30.6	4.7	
9.5		54.5	7.4	
9.2	35	12.7	40.8	
9.5	36	9.8	40.7	
9.6		24.8	36.9	
8.8	37	13.0	43.5	WZ
9.7		50.4	53.6	
9.8		52.4	21.3	
9.5	38	17.1	40.9	
9.8		37.5	42.8	
9.5		45.4	58.4	
9.7	39	8.7	12.9	
9.7		10.7	11.0	
9.8		16.5	37.7	
9.4		21.1	20.2	
9.5		24.5	48.9	
8.8		25.2	34.3	WZ
8.7		35.9	9.8	A
9.1	40	3.6	55.4	
9.3		27.1	18.9	
8.9	41	30.0	33.0	WZ
9.8	42	20.7	20.0	
9.7		23.2	30.6	

6661—6700

m	23h m	s	—20° ′	
9.8	43	26.3	26.0	
9.7	44	27.2	30.2	
9.8		57.9	3.1	
9.4	46	46.3	8.0	
9.5	47	2.2	3.7	
9.5		2.7	5.1	
9.4		28.8	5.9	
8.0		29.5	51.0	WZ
10	48	34.6	22.3	
9.9		39.6	35.2	
9.7		39.9	8.7	
9.0	49	5.7	36.1	
8.7		6.1	59.2	WZ
9.0		14.2	31.2	
10		33.7	35.9	
10		38.6	58.2	
9.7		46.3	11.6	
9.6		50.5	6.9	
9.4	50	5.2	38.5	
10	51	8.6	12.0	
9.0		15.0	49.7	WC
8.0		23.9	27.2	WZ
9.7		37.3	40.1	
7.3		56.7	50.0	A
8.8	52	6.4	20.0	
9.4		13.5	1.4	
9.0		29.2	50.4	A
8.8		32.4	18.3	
8.5		44.0	12.7	A
10	53	38.7	9.6	
10		43.5	12.7	
10		53.4	27.0	
9.2	54	5.1	46.7	WZ
9.8		19.2	40.1	
9.5		20.5	0.1	
9.9		28.0	23.6	
10		38.5	26.5	
9.4	55	6.5	48.1	
9.7		8.8	13.1	
9.2		13.6	15.1	A

6701—6706

m	23h m	s	—20° ′	
9.3	55	16.1	12.2	
9.4		20.1	13.9	
5.8		29.9	51.1	A
9.4	56	7.1	22.7	
10		28.1	26.8	
10		31.5	50.4	

6707—6712

m	23h m	s	—20° ′	
9.5	56	52.8	33.8	
9.2		55.6	27.3	
8.8	57	10.6	14.8	A
8.8		27.7	13.0	A
10		33.2	40.1	
9.6		42.3	38.6	

6713—6718

m	23h m	s	—20° ′	
10	57	43.2	29.1	
9.5		46.0	35.0	
9.5		52.8	51.8	
9.4		58.3	38.5	
9.8	58	10.4	48.7	
9.0		22.0	28.3	WZ

6719—6724

m	23h m	s	—20° ′	
9.1	58	44.4	6.9	
9.5	59	0.5	52.4	
9.6		15.1	42.2	
10		15.9	39.6	
9.1		26.4	43.0	WZ
9.5		42.8	21.8	

Zone −21°

1—40					41—80					81—120					121—160					161—200				
	0h		−21°			0h		−21°			0h		−21°			0h		−21°			0h—1h		−21°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.8	0	18.2	46.4		9.1	15	37.5	27.8		8.7	31	1.0	20.3		9.0	41	58.5	42.3		9.8	57	0.0	33.5	
9.9		48.4	23.1		9.8	16	4.6	7.0		9.7		3.3	19.0		9.5	42	32.3	37.4		9.0		23.5	40.3	
9.7		54.1	46.6		9.1		7.6	29.9	A	9.7		7.8	29.3		8.5		32.3	55.1	A	9.0		36.8	46.1	A
9.0		58.8	50.0		9.5		20.5	38.4		6.2		17.4	5.6	A	10		54.0	23.8		10		44.3	2.5	
9.5	2	5.3	18.6		9.7		34.2	59.1		8.6		30.4	50.1	A	9.3	43	16.6	38.2		7.6		44.3	30.7	A
10		27.8	14.0		9.4		38.1	32.3		9.5		37.9	10.1		9.5		20.2	57.4		9.6		56.2	50.6	
10	3	0.3	7.9		10	18	13.6	24.7		9.8	32	13.5	45.9		8.6		44.7	39.7	A	9.7	59	22.9	42.7	
9.4		1.9	11.5		9.5		19.1	13.5		9.8	33	2.2	45.0		9.4	44	45.9	3.5		9.5		26.3	48.5	
9.8		11.4	12.1		9.1	19	6.4	42.2		10		8.6	29.7		7.3	45	4.3	53.8	A	9.8		36.0	28.3	
9.7		15.8	44.5		9.5		12.2	36.4		9.0		11.6	47.3	WZ	8.0		20.6	46.7	A	9.9		49.1	45.2	
9.5	4	7.9	9.0		8.2		34.7	27.8	A	7.5	34	16.3	5.5	A	9.6	46	5.9	5.0		10	0	7.0	5.0	
9.5		18.0	22.9		8.6		46.3	19.1	A	9.7		27.3	25.7		9.6		26.9	35.1		9.5		13.1	18.6	
9.8		32.8	20.0		9.8	20	27.8	33.8		9.8	35	12.5	12.4		10	47	15.8	42.5		10		15.5	8.1	
9.9	5	42.4	49.7		9.3		45.4	41.9		9.5		13.5	51.3		9.5	48	39.3	18.7		9.4		23.0	15.3	
6.8		55.0	25.5	B	9.3		46.7	43.0		9.0		25.9	8.8	A	9.1		44.9	38.5		9.0		34.6	10.1	
9.5	6	56.2	58.3		9.6	21	2.8	26.9		8.8		33.4	8.6		7.8		55.3	29.6	A	9.5		52.7	50.8	
7.0		59.5	59.5	A	6.3		3.9	7.9	B	8.7		40.9	25.4		9.6		56.2	9.2		9.2		54.4	25.9	
9.5	7	32.6	43.5		9.3	22	13.0	52.1		8.7	36	35.5	52.0	WZ	9.4	49	5.1	3.8		10	2	4.5	49.0	
9.5	8	27.2	53.5		9.2		23.4	23.1		9.0		41.6	11.7		9.8		30.4	14.8		10		5.9	39.5	
10		29.1	55.7		9.7	23	25.3	30.2		8.8		43.5	2.8	B	9.3	50	24.4	29.1		10		36.0	48.5	
8.8		34.2	13.3		10		49.4	33.5		9.2		44.7	52.3	WZ	7.2		50.2	27.1	A	9.2	3	25.8	18.8	
9.3		38.4	16.2		9.1		59.7	45.2		9.5	37	2.2	20.2		8.2	51	1.7	57.9	A	9.5		53.1	56.3	
8.8	9	8.3	24.9		9.2	24	1.1	10.6		9.4		4.6	20.2		8.8		10.2	6.4	B	9.1	4	3.8	53.2	
6.0		20.7	0.6	B	9.7		37.6	1.6		8.5		39.1	7.5	A	9.7	52	3.0	45.2		9.1		21.4	4.5	
9.9		50.6	15.5		9.7	25	3.2	45.4		9.8	38	0.7	32.6		9.5		21.7	51.2		9.1		26.8	12.6	A
9.1		52.3	17.3		9.7		38.7	20.4		8.7		24.9	42.1	A	10		29.0	55.2		9.8	5	22.8	42.0	
9.8	10	13.7	46.7		9.1	26	6.6	39.6		8.5	39	0.1	27.3		9.0		45.9	14.3		9.8		25.9	16.1	
9.2		36.2	6.9		9.9	27	46.2	59.8		9.5		5.6	46.9		9.0		57.4	50.7	A	7.3		30.5	13.4	A
10		49.3	38.1		9.0		52.8	8.0		9.8		37.4	58.7		8.5	53	9.9	3.8		9.3	6	4.0	8.7	
10		50.8	19.9		7.5	28	51.2	33.0	A	9.8		44.7	6.8		9.4		19.9	0.8		9.5		34.3	26.0	
6.7		55.6	56.2	A	9.2		55.7	40.7		8.9		58.9	39.6	WZ	10		33.1	34.5		8.1		47.5	17.1	A
9.4	11	0.0	34.4		9.8	29	14.3	0.1		9.4	40	13.3	24.0		10	54	21.3	7.8		9.9	7	16.1	13.0	
10		19.3	8.7		9.3		15.8	53.7		10		46.4	5.2		9.2		53.8	54.5		9.2		34.6	8.4	A
9.7		41.4	16.1		9.1		41.9	19.8		9.4		47.7	51.8		9.8	55	1.3	13.1		9.4		46.3	0.4	
9.4		50.9	20.8		9.3		52.8	3.7		9.3	41	35.9	21.1		9.2		3.7	3.9		9.4		46.5	51.3	
9.1	12	3.8	47.6		10	30	14.4	16.0		10		43.9	26.7		9.1		12.3	11.8		9.7	8	2.4	28.6	
9.1		10.3	44.5		9.1		14.8	54.8		9.8		47.4	29.1		10		30.8	31.0		9.2		35.6	8.0	
9.8		37.3	30.4		9.7		27.5	54.3		10		48.3	52.1		9.0		34.4	18.9	A	8.8		37.9	40.0	
9.5		54.4	0.7		9.8		39.7	33.1		7.0		55.8	56.1	A	9.8		55.6	26.8		9.1		49.2	21.4	
9.7	14	12.1	35.3		8.6	31	0.7	59.5	A	9.8		57.6	52.5		9.8	56	4.9	1.7		9.8		50.7	12.5	

201—260

m	1h m	s	—21° ′	
9.7	9	21.6	53.4	
9.1		37.6	50.6	
10		41.2	2.2	
9.5		51.3	20.7	
9.5	10	29.7	37.9	
9.0		50.8	59.5	A
10		57.9	18.7	
9.8	11	32.1	53.5	
9.0		38.9	20.9	A
9.5		45.6	16.1	
9.6	12	50.9	17.5	
9.8		54.8	26.4	
8.9		57.4	41.1	B
9.9	13	3.5	42.0	
7.3		3.9	14.0	A
10		42.9	14.7	
9.9	14	16.9	49.5	
9.9	15	14.8	50.0	
9.0		35.3	36.0	
10		37.1	18.2	
9.4		39.2	23.5	
9.3		46.6	56.3	
7.8		52.4	29.6	A
9.6	16	5.6	45.3	
8.0		6.4	53.1	A
9.6		9.2	41.8	
8.9		23.5	5.2	A
9.1	17	9.7	27.5	
8.8		40.5	51.1	A
10		57.2	22.5	
9.7	18	39.1	48.8	
9.4		58.6	2.5	
9.4	19	23.0	33.9	
9.1	20	2.9	28.3	
6.8		3.7	14.4	A
9.8		23.3	50.9	
7.0		25.7	5.9	A
7.5	21	4.3	10.8	A
10		49.0	52.8	
9.8	23	41.1	29.4	
8.7	24	11.8	51.8	A
9.8		11.9	46.3	
9.4		38.3	36.1	
9.3	25	4.9	57.3	
8.9		18.8	27.0	
9.5		19.8	41.9	
9.7		31.2	28.8	
9.7		33.8	29.3	
8.2		54.9	49.7	
9.5	26	1.5	9.2	
9.2		36.6	16.9	
7.8		54.5	46.5	A
10		57.7	24.7	
9.5	27	11.3	29.0	
9.8		27.4	52.9	
9.0		52.1	5.2	
9.0	28	14.2	0.2	
9.2		21.3	47.9	A
8.5		24.1	56.5	A
9.1		24.9	14.9	

261—320

m	1h m	s	—21° ′	
9.4	28	42.0	16.7	
9.4		48.0	31.0	
9.1		59.7	54.6	
7.8	29	11.4	15.4	A
9.3		36.5	51.5	
8.9		52.1	25.1	A
10	30	9.3	21.3	
9.5		18.2	54.2	
9.2	31	20.9	48.8	
9.7		44.8	29.3	
9.8	32	7.4	58.2	
9.8		21.4	30.1	
9.5		24.3	57.3	
8.5		54.4	15.3	A
9.1	33	14.3	39.2	
8.9		30.7	44.8	
9.0		45.9	12.8	A
8.7		54.5	5.7	A
10	34	44.5	9.2	
10		53.3	38.0	
9.7	35	19.6	24.9	
9.5		28.0	34.4	
9.8	36	23.0	44.6	
9.8		24.0	38.1	
9.6		27.9	7.9	
9.9		28.0	43.8	
9.8	37	25.2	29.2	
7.6		28.7	18.6	A
10		43.1	37.0	
10	38	13.4	34.9	
9.5		15.9	4.8	
10		43.2	43.4	
10	39	6.1	39.7	
9.1		29.1	40.5	
9.2		37.5	3.4	
9.5	40	13.2	28.9	
9.1		28.4	44.6	
9.2		41.1	54.8	
9.5		41.4	12.0	
6.4		45.3	33.9	B
9.8		49.2	19.2	
9.7		58.4	50.7	
9.2	41	13.7	7.5	
9.4		24.4	31.0	
9.8		25.0	40.0	
8.5		33.7	21.9	B
9.5		39.3	16.1	
10		43.2	39.6	
10		47.6	6.3	
8.9		56.8	43.6	
9.4	42	1.8	36.7	
9.3		7.5	22.0	
9.2		12.1	22.4	
9.8		24.2	9.5	
9.8		35.3	17.9	
9.4		38.2	48.1	
8.7		53.7	7.7	
9.5	43	1.4	45.0	
9.8		16.1	7.1	
9.0		16.3	28.9	

321—380

m	1h—2h m	s	—21° ′	
9.8	43	28.7	24.7	
9.6		30.4	39.6	
9.5		37.8	35.8	
9.7	44	21.7	26.9	
10		39.9	31.2	
9.0		46.7	54.8	
8.3	45	32.7	19.9	
9.2		35.6	29.4	
9.5		40.5	39.4	
9.9		54.9	57.0	
8.6	46	12.0	40.9	
10		20.0	48.5	
8.8		40.8	57.8	A
9.5		41.4	50.2	
9.5	47	0.3	21.1	
9.3		19.5	58.8	
9.2		49.2	58.6	
8.3	48	38.4	31.0	
7.3		58.3	16.5	B
10	49	2.2	2.0	
10		15.2	36.3	
9.8		21.2	40.4	
9.9		36.9	22.5	
9.2	50	0.0	54.3	
9.6		3.7	6.4	
9.2		9.6	57.4	
9.2		17.2	42.8	
9.7		40.4	27.9	
10	51	8.8	28.4	
9.7		11.8	22.9	
8.5		52.2	33.4	
7.4	52	5.0	50.3	B
9.4		6.1	11.6	
9.1		24.5	16.4	
9.2		47.3	35.6	
6.0		56.3	31.6	B
9.3	53	8.1	22.7	
4.1		10.3	46.6	A
9.5		39.3	27.3	
9.2		41.5	12.2	
9.0	54	11.4	36.5	
8.4		29.3	35.9	A
9.4		47.5	17.1	
9.5	55	8.9	47.7	
8.8		43.2	0.8	
9.3	56	13.6	42.7	
10		27.5	13.5	
9.6		34.6	54.3	
9.4	57	26.4	42.8	
9.8		52.2	36.0	
9.3		57.1	14.7	
9.1	58	5.7	39.4	
9.0		12.0	9.3	
9.1		15.6	12.6	
9.5		31.6	17.0	
9.4	59	12.0	2.3	
9.4	0	38.0	4.0	
9.5		43.7	34.4	
8.7		52.9	30.7	
9.6	1	26.6	20.6	

381—440

m	2h m	s	—21° ′	
9.5	1	45.9	43.6	
8.8		57.6	48.1	A
9.0	2	36.2	25.6	
8.8	3	20.3	26.9	
9.3		33.3	4.9	
9.7		44.7	50.9	
9.5	4	50.6	12.5	
9.1	5	16.3	4.2	
8.2		16.6	31.7	A
8.2		25.8	44.8	B
9.4		48.6	53.1	
9.4		58.8	44.7	
8.7	6	0.1	41.9	
8.7		3.6	52.8	
10		8.0	21.6	
6.2		15.5	40.9	B
9.1		23.3	52.7	
9.4		25.7	40.3	
9.8		42.1	47.0	
8.5	7	18.9	12.5	A
9.3	8	0.6	27.0	
10		17.0	46.2	
7.9	9	1.6	59.6	A
8.4		24.0	40.9	A
9.2		33.2	54.5	
8.0		49.5	47.8	A
9.6	10	11.3	35.4	
9.3		18.8	37.6	
9.7		38.7	26.3	
9.9	11	2.9	2.8	
9.3		32.4	41.5	
10		33.5	38.7	
9.8		47.2	22.6	
10	12	28.7	55.0	
9.1		46.3	17.0	
8.5		54.5	39.8	
8.0	13	24.2	29.4	A
9.4		38.7	12.8	
9.8	14	32.4	38.7	
9.5		36.6	7.7	
9.0	15	7.6	0.5	
10		36.9	54.1	
9.0		47.8	46.5	
9.4		48.7	55.5	
10	16	9.7	41.2	
9.2		11.2	9.4	
9.5		25.5	49.3	
9.6	17	4.9	53.9	
10		23.8	12.0	
9.5	18	20.0	17.7	
8.6		30.4	17.3	
10		41.2	6.4	
8.5	19	3.4	58.5	A
10		22.3	49.7	
8.9		44.8	37.2	A
9.7	20	27.6	39.7	
9.1	21	34.6	46.4	
8.8	22	14.8	50.7	A
7.0		36.7	41.2	A
9.1		53.7	53.3	

441—500

m	2h m	s	—21° ′	
8.5	23	18.4	29.9	A
8.9		22.6	32.8	A
9.3		23.3	51.2	
9.3		34.2	15.6	
9.3	24	1.3	16.7	
9.8		9.4	22.0	
10		18.6	38.8	
9.5		42.0	33.3	
9.4		43.6	17.3	
9.6		51.6	50.5	
9.6	25	44.9	32.5	
9.7		55.0	2.1	
9.4	26	14.2	24.0	
9.3		43.7	0.8	
9.4	27	52.7	46.8	
9.6	28	39.3	24.7	
9.4		53.3	48.7	
9.8	29	33.4	44.2	
8.2		38.9	59.9	A
9.2		59.0	9.6	
8.2	30	7.3	23.9	B
9.0		10.2	56.0	A
9.5		25.4	4.7	
9.3		34.9	49.2	
9.7		37.9	9.2	
8.9		40.5	17.9	R
9.5		53.5	7.0	
9.6	31	13.1	24.1	
6.8		53.4	5.1	A
8.0		57.1	40.1	A
8.3	32	23.5	29.9	A
10		33.2	18.3	
9.3		59.7	52.5	
7.5	33	1.0	2.8	A
9.4		43.3	47.6	
9.6	34	27.7	14.9	
9.8		55.9	10.1	
8.2	35	5.7	47.9	
10		50.5	46.1	
9.3		53.2	1.6	
8.5		58.2	9.9	A
10	36	13.9	36.5	
9.7	37	1.8	48.6	
9.4		6.3	12.3	
9.2		14.7	25.6	
9.8		15.4	23.2	
9.1		19.9	41.0	
9.8		27.8	46.4	
9.0		28.7	8.8	
10		35.1	58.7	
10		45.1	59.3	
9.9		54.5	28.1	
7.0	38	40.2	1.1	B
9.4	39	5.2	45.8	
8.9		9.1	29.3	A
10		59.1	48.3	
9.0	40	9.6	41.3	
9.4	41	5.7	51.9	
7.7	42	1.6	25.7	A
9.4		10.1	32.6	

501—560				561—620				621—680				681—740				741—800			
	2h		−21°		2h—3h		−21°		3h		−21°		3h		−21°		3h—4h		−21°	
m	m	s	′	m	m	s	′	m	m	s	′		m	s	′		m	s	′	
9.4	42	10.3	31.1	9.5	59	56.8	35.1	7.8	18	45.3	35.3	A	9.2	37	34.7	27.2	9.3	50	14.4	21.5	
9.5		25.1	19.8	9.8	0	14.7	59.4	9.8		52.7	58.5		7.8		57.6	34.0	WZ	9.2		43.8	34.9	A
9.3		27.6	26.7	A	8.0		44.2	12.5	A	8.9	19	47.0	17.7		9.1	38	16.2	57.9		9.8	51	18.6	39.5	
9.8		28.1	24.2		8.7	1	47.5	44.5	A	9.8		50.7	50.6		9.4		16.7	22.3		9.4		30.1	56.9	
9.7	43	22.6	15.8		9.2		53.9	35.1		9.4		53.3	22.8		8.8		23.7	45.3	WZ	8.9		42.6	56.0	A
9.1		57.5	10.4	A	9.8	2	24.5	32.6		9.5		59.0	16.1		10		33.1	55.2		9.9	52	6.9	50.0	
9.5		58.4	22.1		10		32.1	58.7		9.5	20	10.5	17.4		9.0		46.7	45.7	WZ	9.6		12.2	54.2	
9.4	44	17.8	24.3		10	3	38.8	25.1		9.1		20.0	8.0		10		49.8	28.6		9.4		23.3	26.6	
5.0		27.0	35.8	A	8.8		44.3	7.0	A	9.5		55.6	18.3		8.8	39	5.3	41.3		9.5		33.6	23.6	
10	45	5.9	9.9		9.7	4	19.9	31.2		8.9	21	19.6	54.1	WZ	9.5		27.4	31.2		9.8		57.5	59.5	
8.3		12.0	53.0	A	8.9		35.2	57.0		9.0		37.3	27.6	A	9.5		29.8	17.1		9.8	53	34.3	56.6	
9.8		13.0	59.1		9.9		49.9	13.4		9.4		51.4	4.2		8.7		32.9	26.2	A	9.5		42.2	22.8	
9.5		17.7	33.6		7.8	5	30.0	20.4	A	9.5	22	9.9	20.6	A	9.4		39.9	53.8		9.8		42.3	4.7	
8.1	46	10.6	49.8	A	9.6		40.3	43.6		9.8		10.1	43.8		9.1		42.0	32.6	A	9.0		49.5	22.1	A
9.1	47	11.2	8.3		9.3		42.5	54.9		9.5		38.3	55.7		8.7		56.3	16.4	A	9.1		53.9	44.2	
10		31.4	45.5		7.0		43.7	10.1	A	7.8		50.6	52.3	B	9.6	40	4.4	30.5		9.3	54	19.1	33.6	
7.8		52.2	31.1		9.5		54.5	56.4		8.3	23	13.3	54.9	A	9.5		31.7	12.4		9.8		19.4	11.2	
8.1	48	9.7	46.9	A	9.5	6	13.7	13.2		9.5		43.2	25.2		9.8		38.8	56.8		7.5		32.8	7.6	A
9.1		14.4	47.8	A	9.8		28.7	46.1		9.5	24	26.0	52.8		9.3	41	25.2	46.2		9.4		33.8	56.6	
8.8		17.6	33.8	B	10	7	13.0	45.9		9.5		29.7	23.8		9.4		29.3	57.7		8.3		37.9	54.5	WZ
9.8		37.3	22.6		9.9		26.9	59.4		9.9		30.4	14.7		9.9		30.5	29.0		8.7		48.8	33.1	WC
10	49	3.5	39.5		9.4		31.1	47.4		9.4	25	11.2	33.9		9.8		30.6	48.7		8.8		56.0	44.4	
9.8	50	22.8	6.7		9.1		33.8	2.6		9.1		21.4	49.1		5.7	42	11.9	20.8	A	9.5		57.4	44.9	
7.6		35.9	50.0	A	9.2		33.9	8.2		8.5		38.6	44.5	A	9.0		26.2	44.8		7.0	55	35.4	25.7	A
9.8		45.2	29.1		9.8		39.9	29.2		9.4		53.7	47.1		9.7		36.3	15.6		7.8	56	24.2	7.9	A
9.5		57.0	22.5		9.5		49.5	49.8		9.0		58.5	6.4		9.8		38.8	57.7		9.6		28.0	25.0	
9.8	51	3.6	50.0		8.6	8	23.6	3.8	A	9.3	26	1.6	48.0		8.8		57.2	19.0	A	9.5		28.8	6.0	
9.0	52	51.1	18.2	A	9.4		42.7	9.6		9.3		11.1	7.8		9.8	43	12.9	0.5		7.6		56.6	49.3	B
8.0		53.3	22.9	A	8.9	9	25.3	22.0	A	8.8		31.5	16.7	A	9.5		33.4	45.5		10	57	17.1	54.7	
9.8		54.2	45.3		9.5		26.5	49.1		9.5		31.9	26.7		9.8		55.7	27.0		8.7		56.8	0.1	A
9.6		58.6	58.2		9.2		31.7	34.0		9.5		55.8	6.6		9.0	44	11.5	5.4	A	8.6		56.9	44.9	
9.3	53	13.0	49.0		9.9	10	9.8	55.7		9.6	27	0.3	12.2		9.3		42.5	54.8		9.6		59.2	41.1	
7.3		37.1	23.6	A	9.3		37.3	38.0		9.3		19.2	28.3		6.6	45	9.1	43.2	WZ	9.0	58	7.9	28.9	
9.5	54	9.2	7.0		8.9		42.2	12.9		9.6	28	7.7	47.7		9.8		17.3	28.6		8.8		14.0	52.0	B
7.3		14.5	16.2	A	9.1		53.3	40.0		9.8		30.2	29.7		9.0		30.7	39.7	WZ	8.5		38.4	13.7	A
8.9		19.1	25.5	A	9.1		54.6	34.8		9.7	29	2.6	38.2		9.8		38.1	14.1		9.7		45.3	44.4	
9.0		23.0	19.1	A	9.4	11	26.1	58.4		9.5		10.1	32.6		9.3		39.7	39.8		7.5		51.7	51.3	B
9.3		28.3	42.8		9.4		29.8	38.7		9.2		31.9	55.7		9.3		58.3	30.9		9.4		55.1	14.8	
9.5		30.7	51.9		9.4		44.9	41.6		9.7		40.9	52.7		9.0	46	5.8	36.1	WZ	9.5		58.6	47.0	
9.3		36.2	58.7		9.2		59.4	49.6		9.0	30	3.8	7.2		9.9		9.0	37.4		9.7	59	3.4	53.2	
9.1	55	3.4	0.5		9.2	12	11.8	2.6		9.9		31.1	49.4		9.5		10.3	41.0		9.8		22.0	32.0	
9.6		31.3	34.7		9.6		29.8	26.0		9.8		51.9	56.2		8.8		14.1	15.2		9.8		54.4	3.5	
9.7		34.5	10.2		9.5		40.5	14.1		8.8	31	0.5	22.5	A	10		30.6	54.5		9.8	0	6.6	42.4	
9.1	56	0.5	3.2	A	8.8	13	29.6	0.3		8.8	32	0.9	13.3	A	9.7		41.8	46.9		9.1		13.2	13.0	A
10		29.0	52.3		9.1		31.5	21.9		8.9		18.9	47.7	WZ	9.8		51.9	46.4		9.1		13.6	59.3	
9.3		42.1	30.4		9.4		34.3	25.8		9.8		39.0	15.8		9.5		52.3	23.0		9.2		20.0	34.8	
10	57	2.9	43.0		9.5		34.4	47.6		8.0		57.8	3.8	B	8.3	47	7.6	26.5	WZ	9.4		36.2	7.5	
9.8		9.9	43.2		9.5	14	8.7	2.8		8.8	33	14.1	19.0	A	9.7		42.6	46.8		9.5		36.3	16.4	
7.5		14.4	55.8	B	9.4		11.2	10.2		9.3		33.6	19.4		9.4		56.0	38.1		9.6	1	29.1	21.9	
9.1		25.8	39.7	A	9.1		26.3	8.4		9.1		43.9	6.1		9.2		57.6	31.2		9.5	2	1.0	7.5	
8.5		30.7	17.5	A	9.0		35.1	38.2	A	10		56.8	58.8		8.5	48	17.1	7.0	A	8.2		1.7	31.3	B
9.1		50.2	38.5	A	9.4		43.4	29.7		8.6	34	4.6	51.2	A	9.7		19.6	27.2		8.7		28.5	54.7	A
9.0		52.3	7.0	A	9.0	15	2.2	58.7	A	9.8	35	34.0	5.2		9.0		46.7	43.4		9.8		31.1	16.2	
9.6	58	0.6	51.3		9.5		3.0	29.8		8.0		38.5	42.0	A	9.8		48.7	37.8		9.1		36.4	0.4	
8.2		3.9	58.4	B	9.4		26.7	24.8		8.8		59.6	9.6		9.5		54.5	40.1		9.5		38.3	53.0	
9.5		37.7	41.2		7.0		48.6	37.4	B	9.0	36	1.6	35.1	WZ	8.3	49	2.0	59.9	B	9.5		39.6	18.9	
8.5		55.6	41.0	A	10	16	14.8	42.9		8.3		13.9	0.9	WZ	9.7		7.3	8.4		8.5		49.0	5.5	B
9.5	59	21.5	31.9		8.8		17.2	36.2	A	9.5		31.8	52.8		9.1		51.3	13.1	A	9.8	3	5.0	7.1	
9.8		35.4	58.5		7.2	17	39.5	27.1	B	9.8		57.0	12.9		9.0		51.5	6.1	A	9.8		10.3	26.0	
9.2		44.3	24.3		9.8		55.3	45.1		9.1	37	12.0	6.1		9.7	50	4.5	56.5		9.3		24.3	25.7	

624: neb GC 709

801—860

m	4h m	s	−21° ′	
9.1	3	43.5	53.0	A
9.5		57.4	6.8	
9.4	4	28.2	22.1	
9.4	5	5.8	34.8	
9.1		7.1	33.5	
9.4		17.6	6.8	
8.2		25.2	47.6	B
9.5		25.9	29.6	
9.1		27.6	7.7	
9.4		33.4	37.2	
9.4		37.5	34.8	
8.5	6	34.5	44.4	A
9.3	7	3.8	30.4	
9.6		11.5	40.7	
9.0		48.1	27.0	
9.0	8	4.7	12.0	
8.5		5.6	5.6	
9.5		17.3	49.6	
9.1		47.4	19.9	
9.5		51.5	9.4	
9.3		53.2	26.0	
9.4		58.3	30.0	
9.8	9	11.0	48.2	
9.5		27.6	23.7	
9.0		48.9	34.5	
8.5	10	10.7	4.6	B
9.5		53.1	12.2	
9.0		58.4	22.6	
8.1	11	20.8	36.8	
9.5		53.1	48.5	
6.2		57.5	4.2	B
8.8	12	9.3	6.8	
9.1		17.1	28.9	A
9.4		28.7	45.1	
9.5		35.8	55.0	
9.3		49.6	32.5	
9.0	13	35.0	3.2	
9.8		49.3	55.9	
9.2		52.0	42.6	
9.2	14	4.4	46.0	
9.5		5.9	52.7	
7.3		8.4	40.9	A
8.7		9.7	33.8	A
9.1		12.6	40.8	
7.2		48.0	35.6	A
9.4	15	0.3	25.1	
9.1		2.4	58.4	
8.3		9.0	16.3	A
10		34.3	54.1	
9.4	16	12.7	31.5	
9.8		22.6	37.6	
8.5		33.4	5.8	
8.9		37.3	56.4	A
8.9		52.6	57.4	A
9.1	17	15.2	42.3	
10		34.4	56.7	
9.8		50.3	53.5	
9.3	18	20.6	49.5	
7.7		45.5	32.9	R
9.2		53.6	45.8	

861—920

m	4h m	s	−21° ′	
10	19	4.0	5.7	
9.5		6.2	34.0	
9.5		12.5	15.7	
8.5		14.3	17.5	
9.0		28.2	38.7	B
9.0		39.8	26.9	
9.5		43.4	49.4	
8.8	20	7.3	50.5	A
8.3		8.1	17.5	
9.8		19.0	58.9	
9.2		20.8	59.9	
9.1		32.8	45.0	A
9.8		49.1	11.9	
9.3	21	0.7	54.7	
9.4		5.2	57.8	
9.8		23.6	58.0	
9.4		29.6	52.4	
6.7		40.4	49.5	A
9.5		54.2	30.7	
9.8	22	8.5	27.8	
9.2		30.1	9.7	
9.8		40.7	12.0	
10		45.3	29.2	
9.8		54.9	52.8	
9.5		57.1	9.6	
8.4	23	6.6	45.1	A
9.3		15.2	51.2	
9.0		18.3	18.5	
9.5		25.9	49.5	
9.6		27.3	55.5	
9.0		38.1	4.0	
8.8		52.2	9.9	
9.9	24	13.2	59.4	
8.4		16.1	13.4	
7.6		32.3	41.5	B
7.8		33.7	8.7	A
10		58.3	29.4	
9.6	25	14.0	42.4	
9.4		20.1	13.2	
8.5		26.8	19.2	A
10		29.5	55.1	
8.2		38.4	32.4	A
8.9		40.3	43.4	A
6.5		42.0	0.6	A
9.0	26	13.3	38.0	A
9.8		36.3	18.7	
8.8		47.7	27.7	A
8.8	27	0.0	11.5	
9.1		0.8	46.2	
9.0		1.3	26.4	A
8.6		5.3	41.0	A
9.4		5.7	53.2	A
10		37.1	43.4	
9.5		54.3	8.2	
8.8	28	0.5	57.7	A
7.5		47.2	2.7	B
9.8	29	0.3	14.5	
8.5		5.1	3.8	B
7.5		30.0	38.1	B
9.3		35.9	57.7	

921—980

m	4h m	s	−21° ′	
8.0	30	2.5	37.0	B
9.1		12.7	4.3	
10		20.0	41.9	
9.8		26.6	14.8	
9.2		28.1	22.4	
9.5		45.0	59.3	
9.8		50.4	7.6	
9.8	31	8.8	59.0	
9.0		10.9	56.5	
9.5		22.6	37.7	
9.4		30.6	54.7	
9.5		48.8	0.9	
8.8		55.4	8.0	A
9.0	32	4.0	40.7	
9.8		16.5	18.5	
8.9		17.1	8.4	
8.8		31.5	42.4	A
9.2		57.6	35.3	
9.3	33	11.0	54.7	
8.9		20.6	31.1	A
7.3		22.1	31.7	A
9.6		34.7	4.2	
9.5		35.2	5.5	
9.1		54.6	23.6	A
9.8	34	1.1	42.7	
9.5		22.6	47.0	
9.4		41.3	43.4	
8.7	35	30.2	38.6	A
9.5		44.9	6.8	
9.1		52.2	8.1	
9.1		58.7	52.5	A
10	36	13.1	39.9	
7.3		15.5	15.0	B
9.5	37	3.3	31.0	
9.7		8.6	29.5	
9.7		13.7	33.1	
8.9		21.2	4.4	
8.8		23.5	0.3	A
8.6		30.9	43.2	
7.6		48.5	22.8	B
8.7		49.9	57.7	
9.1		53.7	48.7	
9.8	38	4.2	18.3	
9.6		21.0	48.5	
9.4		35.6	41.5	
5.5		49.7	33.1	B
9.8	39	4.6	30.1	
10		4.7	56.1	
9.5		59.4	32.8	
8.5		59.4	43.8	B
10	40	5.6	57.8	
9.4		7.7	40.5	
9.4		14.0	25.9	
9.2		30.8	28.8	
8.8		36.2	23.0	
8.8		38.1	57.2	
7.0		42.8	28.5	A
9.5		52.5	55.2	
7.8	41	30.5	4.3	A
9.7		40.1	43.5	

981—1040

m	4h m	s	−21° ′	
9.8	41	48.0	22.0	
8.5	42	0.9	10.2	A
9.3		15.5	57.0	
9.5		24.0	23.1	
9.3		26.3	46.2	
9.5		36.6	38.3	
9.4		50.0	8.9	
9.5	43	6.0	14.0	
9.7		24.5	58.0	
9.0		40.6	12.7	
9.3	44	11.6	23.0	
9.1		44.6	30.8	A
9.0	45	8.1	23.2	A
9.8		54.6	54.1	
9.6	46	4.3	57.9	
9.7		12.3	53.4	
9.1		14.6	58.3	
8.8		15.3	9.9	A
9.4		17.5	48.1	
8.8		21.9	49.1	A
9.5		42.2	44.3	
9.0		51.8	37.1	
7.0		57.4	1.0	A
9.4	47	3.3	25.7	
8.5		11.6	54.2	A
8.5		22.2	46.9	B
9.8		29.0	16.8	
9.5		29.9	37.1	
9.5		53.8	29.3	
9.7	48	15.8	58.5	
9.1		16.6	37.8	A
9.7		38.2	41.6	
8.9		40.2	24.7	
9.1		44.0	25.7	
9.6	49	3.2	44.5	
9.4		18.7	36.1	
9.7		23.1	53.4	
9.2		23.7	34.8	A
9.7	50	5.1	27.2	
9.3		17.4	56.0	
9.4		31.8	19.1	
9.2		37.4	34.3	A
9.1		40.9	33.8	A
9.7		50.4	38.7	
10		59.5	27.5	
9.2	51	4.1	31.5	A
9.3		5.2	1.3	
9.4		7.8	20.1	
10		30.1	53.7	
9.5		44.7	55.5	
9.5	52	6.3	14.5	
9.7		10.0	48.2	
9.6		33.5	32.5	
9.5		49.3	11.5	
9.6		56.6	13.3	
9.1	53	4.9	19.1	
9.5		10.4	55.6	
9.0		33.5	37.2	
9.5		36.7	42.6	
8.8	54	2.1	6.4	

1041—1100

m	4h—5h m	s	−21° ′	
9.6	54	21.4	48.7	
9.6		27.8	37.7	
9.9		45.4	51.4	
8.9		57.4	12.4	
8.2	55	18.8	52.8	B
9.4		20.9	19.6	
9.8		40.1	7.7	
9.8	56	5.9	20.2	
9.4		9.4	48.3	
9.4		10.3	44.7	
8.2		17.7	28.1	
9.5		18.8	46.8	
9.0		31.0	37.5	
8.0		31.4	18.6	B
9.4		38.9	18.7	
9.7		51.1	48.6	
9.3	57	19.6	33.2	
9.1		19.7	39.5	
9.2		20.6	45.5	
9.5	58	5.5	50.5	
8.5		10.4	20.4	B
9.9		18.4	44.5	
9.5		20.1	28.0	
9.5		28.9	52.5	
7.5		29.3	25.7	B
9.5		52.9	55.6	
7.7	59	5.4	27.6	A
8.6		23.2	37.4	A
9.8		39.7	57.0	
8.5		44.0	21.1	
8.5		55.4	5.0	
10	0	34.1	7.1	
9.5		37.0	28.7	
9.3		39.2	47.2	
10	1	4.1	30.0	
9.2		30.5	40.2	
9.8		32.9	1.0	
8.4		56.8	39.4	B
9.1		58.6	49.3	
9.2		59.4	7.5	A
9.5	2	16.3	58.1	
9.2		18.5	16.0	A
9.5		50.0	24.6	
9.0		50.2	57.2	A
9.5	3	0.4	13.5	
9.3		17.4	59.7	
9.8		45.4	15.5	
10	4	1.6	28.8	
9.8		5.5	17.5	
8.7		8.3	57.5	A
9.6		16.6	44.0	
9.6		17.2	48.0	
9.3		19.5	16.6	
10		52.2	50.7	
9.0		53.9	40.5	
9.0		58.5	4.9	
9.4	5	18.7	28.9	
9.5		21.4	34.6	
9.7		21.8	45.4	
9.4		27.6	20.3	

831: roth

1101—1160				1161—1220				1221—1280				1281—1340				1341—1400			
	5h	−21°			5h	−21°			5h	−21°			5h	−21°			5h—6h	−21°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.6	5 58.6	23.6		9.7	18 9.6	36.1		9.0	33 30.3	41.9		9.7	44 51.9	44.0		9.6	57 59.0	28.5	
9.1	6 15.1	33.5		10	15.4	40.4		9.5	41.1	22.4	A	9.7	45 2.0	43.1		9.3	58 15.7	43.3	
9.2	40.1	52.2		9.2	20.4	52.1		9.0	41.2	7.2		9.4	11.5	38.0		9.5	28.6	27.9	
9.8	45.7	9.3		10	48.2	41.8		9.4	50.3	56.7		8.4	28.0	39.8		9.4	29.7	54.5	A
9.4	46.4	25.9		9.1	19 28.7	24.1	A	9.5	34 4.0	50.8		9.5	31.8	14.7		9.0	45.8	40.9	A
9.7	7 38.3	29.0		9.5	35.4	53.8		9.8	8.4	35.8		9.5	46 0.7	3.2		9.6	59.0	43.3	
7.5	54.8	49.4	B	9.2	37.4	24.2	A	9.1	15.1	3.6	A	8.3	7.2	54.0		9.9	59 32.8	49.6	
9.0	58.8	49.1		9.6	20 20.9	30.1		9.3	29.3	19.5		9.5	12.8	7.5		9.4	44.0	24.4	
9.5	8 11.7	49.7		8.8	39.2	47.6		8.5	29.7	18.5	A	9.0	15.1	33.9		9.5	54.4	11.7	
9.6	15.2	2.1		9.5	40.7	35.6		9.3	33.3	58.0		9.0	25.6	42.2	A	10	0 7.9	29.7	
9.1	17.2	59.2		9.4	49.4	26.3		7.8	50.8	37.2		9.7	29.2	43.0		10	9.8	29.7	
9.3	34.2	46.3		9.4	21 0.0	5.0		9.5	35 13.2	15.0		9.5	53.4	19.6		9.4	21.5	35.7	
9.8	37.5	4.1		8.3	24.5	2.5	A	9.2	14.7	36.4	A	9.3	56.4	32.5		6.1	49.3	47.9	
9.8	47.9	1.0		6.1	26.0	30.0	A	9.4	22.4	40.8		8.9	47 7.4	50.6	A	9.1	50.4	13.5	
9.8	56.9	25.3		9.4	22 6.0	14.1		9.5	39.3	56.2		9.7	48 4.0	47.4		9.5	1 2.5	22.0	
9.2	9 2.9	48.1		8.8	10.4	15.7		9.4	44.4	21.2		9.7	17.4	36.2		8.5	6.2	31.0	
8.3	25.1	22.2		9.0	21.5	48.9	A	9.8	58.8	28.0		9.6	33.0	46.8		8.3	13.4	11.1	
9.7	29.5	41.0		9.7	25.9	43.7		9.2	36 20.4	36.7	A	8.5	33.5	18.4	A	9.5	27.3	10.4	
7.8	10 18.5	15.9	B	7.7	23 19.1	9.7	B	9.1	20.6	27.2	B	10	49.6	55.5		9.4	28.0	37.6	
9.8	33.9	56.8		9.5	24 7.6	0.9		9.0	42.2	6.6		9.5	49 6.5	27.6		9.8	49.4	30.0	
10	42.6	27.1		8.0	38.6	31.1		9.3	57.1	31.7		9.8	7.6	10.0		9.4	2 9.5	18.7	
9.3	44.2	44.2		9.4	44.2	35.0		9.5	37 9.4	1.8		9.2	8.2	27.6		9.2	17.1	56.1	A
8.8	46.0	25.6		8.5	46.4	41.6		9.7	16.5	47.9		9.8	43.9	58.8		9.5	36.5	43.2	
9.5	59.7	16.8		8.9	49.0	14.3		6.7	36.4	29.5	A	7.0	44.3	42.3	B	9.2	3 3.5	22.9	
9.3	11 8.9	12.5		8.8	57.6	28.0		7.2	40.8	20.7	A	9.0	48.9	24.6		9.1	8.7	43.0	
9.7	22.6	54.2		9.1	25 33.5	52.4		9.0	45.9	2.2		9.2	55.2	2.7		9.2	22.4	12.4	
10	12 8.2	50.4		9.9	34.2	33.0		9.5	53.7	59.0		7.0	59.3	8.9	B	9.6	29.3	43.7	
7.7	10.0	58.9	B	9.0	37.7	3.9		9.5	38 7.0	53.0		9.5	50 2.2	5.9		9.8	30.8	53.8	
8.3	13.2	2.0	A	9.2	42.5	54.2		9.5	21.2	50.7		8.3	5.8	30.9	B	8.9	33.2	59.7	A
9.5	13.2	46.2		9.9	48.6	3.3		9.5	29.0	6.2		9.2	5.9	28.3		10	40.5	29.0	
9.1	39.1	33.2		8.8	26 15.9	24.5		9.1	39.8	34.4	A	9.1	12.2	40.5		9.1	43.2	10.8	
9.0	52.0	17.1		9.0	45.7	17.7		7.2	42.4	43.1	A	8.8	43.6	48.4		9.6	46.2	13.0	
9.8	13 49.4	50.1		8.5	45.9	7.6	A	9.0	46.5	45.5		8.6	51 10.2	4.9		9.5	4 2.9	8.8	
9.5	14 2.8	4.1		9.5	46.4	2.9		9.8	39 10.7	57.2		8.8	51.8	30.1		10	8.8	26.2	
5.0	15.1	23.1	B	8.9	46.7	51.4		9.8	46.6	32.5		9.8	52 1.5	27.9		9.8	19.2	57.2	
9.5	23.6	41.6		9.2	27 5.9	59.9		9.0	40 10.0	53.8	A	7.8	25.5	33.7	B	9.3	19.3	24.5	
8.0	43.4	11.0	B	9.8	13.8	50.2		9.0	11.3	48.5	A	9.5	53 9.4	23.8		8.7	28.3	48.9	WZ
8.6	53.0	49.9		10	28.6	7.4		9.9	22.2	1.3		10	24.9	59.1		9.7	28.4	44.5	
9.6	15 3.0	25.1		8.4	43.3	16.4	B	9.1	23.9	20.9		9.8	38.9	58.4		9.7	29.9	1.1	
9.5	10.0	18.4		9.0	58.2	37.9		8.0	28.7	4.6	A	9.2	51.4	0.5	A	9.8	47.4	0.6	
9.5	17.9	24.5		9.2	28 12.1	4.3		8.7	33.9	52.9	A	8.2	51.7	25.4		9.4	5 0.2	35.0	
9.6	19.5	30.7		9.1	18.6	30.0		7.9	41 2.8	35.9	B	9.8	54 12.9	15.9		9.6	19.5	48.2	
9.3	21.6	22.5		9.7	29.8	47.3		9.6	12.4	40.8		8.5	39.3	9.2	A	8.8	26.5	26.4	A
9.8	41.9	48.2		9.8	35.9	55.9		10	26.3	25.5		8.0	40.7	0.7	A	9.1	28.2	12.5	A
9.5	47.8	58.6		7.5	47.0	9.9	B	10	28.3	13.8		8.4	42.7	56.9	A	9.3	56.9	59.5	A
9.4	58.7	40.0		9.1	29 6.9	53.9		10	30.5	56.0		9.9	49.5	45.5		8.9	6 23.2	28.2	A
9.4	16 5.5	19.2		9.5	53.2	26.8		8.7	36.7	10.1	A	9.1	59.4	25.4		9.4	33.4	43.5	A
9.4	10.1	59.8		9.6	57.8	2.2		9.0	46.2	43.9		10	55 6.5	56.9		9.5	41.0	6.4	
9.5	12.1	29.4		9.4	30 16.3	28.3	A	9.8	42 2.0	0.4		9.4	19.0	20.8		9.5	42.0	59.9	
9.5	21.1	28.7		9.8	20.1	17.5		10	4.2	45.4		8.5	52.1	48.5	A	9.8	7 13.6	59.7	
9.0	33.4	56.3	A	9.2	26.7	41.1	A	9.1	10.3	52.3	A	9.3	56 14.2	55.0		8.2	17.4	13.8	A
9.4	53.9	4.3		9.5	32.9	43.4		9.5	57.3	53.3		9.7	33.4	46.4		9.5	18.9	9.5	
9.7	56.3	45.6		9.0	31 39.3	42.6	A	9.4	43 0.5	27.1		9.5	41.1	17.5		9.5	21.1	7.9	
9.5	59.4	3.8		9.2	32 2.8	23.7	A	9.4	25.8	17.6		9.6	41.7	42.8		9.7	23.1	55.5	
8.9	17 11.2	21.2	A	9.4	4.7	9.1		9.1	25.9	43.4	A	9.1	43.0	48.3	A	9.8	39.1	46.2	
9.3	24.9	26.1		9.0	12.8	20.3		9.0	43.9	40.4	A	7.6	57 16.4	47.2	B	9.5	8 19.5	27.1	
9.2	25.1	13.8	A	9.6	13.8	46.5		9.0	52.3	26.8		8.7	18.2	40.4	A	9.8	44.7	18.8	
9.4	31.3	45.8		9.4	28.3	20.7		9.7	44 12.4	56.4		9.5	28.1	0.0		9.4	50.8	4.0	
9.0	18 5.5	15.6	A	9.2	49.2	16.2		9.7	25.8	18.7		9.4	33.6	50.3		8.6	9 1.8	5.7	A
9.3	8.7	56.8		9.5	33 29.3	14.4		9.0	29.0	54.0		9.3	57.2	17.1		9.0	10.9	14.0	A

1353: goldgelb

1401—1460				1461—1520				1521—1580				1581—1640				1641—1700			
6h		−21°		6h		−21°		6h		−21°		6h		−21°		6h		−21°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9·3	9 17·9	35·7		9·4	20 19·4	16·2		9·0	30 6·0	10·5	A	9·5	39 48·1	20·4		9·0	47 56·5	19·0	
10	24·2	33·1		9·2	40·4	50·3	WZ	9·4	31·2	12·3	A	9·3	51·4	51·7		9·4	48 0·0	24·9	
10	26·4	25·0		8·0	59·0	28·2	A	9·3	35·1	6·3		9·1	54·9	44·1		9·8	16·2	3·4	
9·8	28·4	25·0		9·5	21 1·0	8·5		9·0	42·1	16·2	B	10	40 9·8	58·5		9·8	26·9	50·4	
9·2	49·7	6·8	A	9·2	7·5	27·0	A	9·8	43·7	21·8		9·3	33·8	35·8		8·7	35·1	41·4	A
9·1	51·3	49·2		9·2	15·5	23·2	A	9·5	57·4	8·8		9·5	36·9	6·2		9·5	38·1	27·7	
9·9	56·9	14·5		9·7	19·8	50·8		9·0	31 20·8	50·2	A	9·8	56·6	53·1		9·5	43·0	20·8	
9·0	10 52·3	7·5	A	9·7	21·0	55·1		8·9	41·0	39·1	A	9·3	57·2	13·4		9·2	44·5	59·6	
9·5	55·0	37·2		10	48·3	9·7		9·2	47·6	15·2	A	9·3	57·7	30·9		9·8	45·7	15·1	
8·5	11 9·3	41·6	A	8·2	53·4	42·2	B	9·8	56·9	6·8		9·1	59·9	30·7		8·7	49 1·4	41·6	A
8·9	31·7	42·3	A	9·4	55·8	5·6	A	9·3	58·2	18·6		9·3	41 21·5	20·1		9·8	4·9	11·4	
10	36·1	5·9		9·4	59·4	7·8	A	9·8	32 1·1	58·9		9·7	28·8	44·1		9·5	6·5	4·7	
9·4	12 10·4	17·3		8·0	22 4·5	55·0	A	9·2	16·0	34·8	A	9·2	40·2	55·6		9·8	7·8	39·9	
10	19·3	56·4		9·8	14·7	55·3		9·0	23·5	43·2	A	9·3	43·6	21·4		9·8	11·0	19·6	
9·5	32·8	0·2		9·1	43·9	22·9	A	9·0	39·6	10·3		9·3	45·0	18·9		7·2	23·5	51·1	A
9·1	37·5	3·1		9·5	46·3	43·4		9·5	43·8	58·7		9·4	47·5	10·4		9·4	38·8	32·4	
8·8	37·7	54·7	A	9·8	50·8	7·0		9·9	48·6	12·8		9·1	51·9	23·7		9·8	46·3	5·0	
8·1	50·6	58·8	A	10	23 25·3	14·5		8·4	33 19·0	39·5	A	8·3	42 6·4	45·0	B	9·0	52·5	19·2	
10	53·3	39·9		9·0	29·0	37·8	A	9·8	26·7	20·5		9·4	8·0	26·1		9·3	50 8·1	31·0	
9·2	13 1·6	41·5		9·8	34·9	18·3		9·0	29·6	12·3	A	9·8	13·4	6·9		9·8	17·9	10·4	
9·5	6·9	9·5		9·5	37·8	15·1		9·4	34·7	26·1		9·2	38·2	46·8		9·5	28·3	7·9	
9·7	20·5	28·8		10	44·6	57·1		10	43·5	43·0		9·7	42·7	44·5		9·5	33·7	4·5	
9·5	21·3	47·8		9·0	47·1	25·2	A	8·8	45·3	28·4	A	9·6	44·7	41·1		9·7	45·1	31·7	
9·1	41·0	35·9		9·7	50·2	56·2		10	47·5	41·9		9·5	56·4	31·8		9·7	46·2	21·8	
9·4	57·9	16·4		9·5	52·7	1·1	A	9·5	53·1	8·9		9·7	43 5·9	33·9		9·2	52·8	1·9	
9·3	14 48·5	52·0		9·8	24 30·6	24·9		9·5	34 3·6	52·5		9·8	9·6	31·2		9·5	59·0	47·0	A
9·4	56·8	27·3		9·5	41·4	19·9		7·5	14·1	15·7	A	9·2	11·5	52·2		9·8	51 0·9	10·4	
9·0	59·9	15·0		9·6	46·5	20·7		10	27·5	52·0		9·7	22·8	51·2		9·6	5·1	0·4	
9·5	15 19·1	2·8		9·7	56·9	47·5		9·8	44·9	2·3		8·4	23·3	1·0	B	9·7	7·7	0·0	
8·9	19·2	27·0		9·7	25 1·8	59·8		9·3	50·8	0·2	A	9·5	53·8	5·0		9·3	10·1	33·6	
9·9	49·2	53·1		6·8	19·6	18·2	A	9·4	52·7	12·0	A	9·7	59·0	43·0		9·5	10·4	45·8	
9·4	16 19·8	3·4		8·3	20·2	56·3	A	9·6	59·8	31·9		9·7	59·6	45·0		9·4	12·8	33·8	
9·5	27·0	21·9		9·7	26 9·7	45·3		9·0	35 8·9	4·2	A	9·7	44 1·0	43·2		9·9	16·8	50·1	
9·4	29·3	37·2		9·5	13·6	9·1		8·8	16·7	37·0		9·5	26·5	11·7		9·7	32·8	8·0	
9·8	35·0	35·4		9·1	14·9	13·5	A	9·2	19·4	40·7		9·5	28·4	31·2		9·1	41·6	44·5	A
9·3	36·8	1·7		10	37·4	12·6		7·8	19·9	58·1	A	9·5	33·0	55·4		9·7	44·1	8·9	
9·8	52·2	39·6		10	43·0	6·9		9·5	54·4	50·2		9·1	48·0	44·3		9·5	44·7	46·6	
8·5	17 16·4	9·6	A	9·3	27 27·7	43·7		9·4	57·5	9·1		9·8	55·1	23·8		9·3	48·6	11·9	
10	38·8	45·1		9·8	45·9	31·0		9·8	36 14·2	6·4		9·4	58·8	35·4		9·0	51·5	20·4	
9·6	39·3	49·7		9·2	50·7	52·5		9·1	17·9	4·0	A	9·8	45 20·2	15·2		8·7	57·9	40·6	A
9·1	40·5	32·0		10	52·7	31·0		9·8	23·4	38·2		9·0	21·7	46·5		9·7	52 1·7	32·9	
9·5	58·5	56·5		7·9	56·2	25·8	A	9·7	37·3	37·1		9·9	35·1	56·0		9·7	4·8	32·6	
9·1	18 5·4	10·5		9·9	58·6	21·4		9·4	37·4	47·2		9·2	45·5	16·8		9·2	16·5	51·0	A
9·2	18·2	54·0	A	9·8	28 19·5	6·5		10	58·1	24·5		9·5	48·9	42·7		10	58·7	29·9	
9·5	22·5	24·2		9·1	37·2	1·4	B	7·4	37 5·5	43·4	B	9·8	55·2	47·1		9·0	53 3·1	11·2	
9·5	24·4	14·6		9·0	37·6	14·3	A	8·1	9·4	35·6	A	9·9	46 8·4	8·9		9·0	3·3	23·5	
9·2	35·2	5·0		9·5	48·7	50·0		9·5	11·6	43·9		10	12·5	54·5		9·5	6·9	11·6	
8·2	54·4	53·1	A	8·7	50·8	52·9	WZ	9·5	34·3	28·4		9·5	20·9	35·7		9·8	24·6	43·3	
9·8	19 6·7	15·5		8·7	56·2	17·7	A	10	38·8	43·0		9·4	21·1	46·2		6·7	28·0	24·2	B
9·8	14·3	24·4		9·5	29 4·9	26·0		9·5	40·6	26·8		7·8	28·0	0·6	B	9·5	43·2	4·5	
9·1	25·6	15·5	A	9·7	5·8	14·6		9·5	52·9	1·6		9·7	36·0	23·9		9·5	44·1	8·3	
9·5	35·9	11·5		9·4	9·1	10·9		9·0	38 16·5	8·6		9·5	43·4	11·2		9·8	45·7	47·4	
9·0	39·5	23·1	A	9·4	16·0	1·4		9·1	22·3	4·7		8·5	48·2	39·7	A	9·2	53·6	36·6	
9·5	50·9	13·8		6·9	22·4	59·4	WZ	9·0	23·5	7·9		9·5	52·8	6·7		9·3	57·8	4·3	
8·5	51·3	28·0	A	10	37·3	51·0		9·7	34·2	58·5		9·8	47 12·5	29·3		6·7	54 9·4	55·1	A
9·7	53·3	31·5		9·9	44·4	40·0		9·4	36·0	12·4		8·6	19·2	52·8	A	9·7	10·5	52·6	
9·4	56·9	34·2		9·7	44·8	25·1		10	45·6	56·7		9·6	30·9	27·4		9·8	22·6	30·5	
10	20 4·0	42·0		9·8	30 1·0	25·4		9·4	46·6	33·5		9·2	30·9	57·0		9·4	29·1	29·1	
9·9	5·4	46·9		9·4	1·4	34·8		9·3	39 42·4	34·0		9·8	32·0	18·5		9·8	31·6	8·2	
9·2	12·5	49·5		9·7	2·4	7·1		9·4	45·0	42·8		8·0	39·9	42·4	A	10	38·3	1·3	

1701—1760					1761—1820					1821—1880					1881—1940					1941—2000				
	6h—7h		—21°			7h		—21°			7h		—21°			7h		—21°			7h		—21°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.1	54	54.2	45.6	A	9.1	1	3.2	58.7	A	9.8	7	51.6	47.2		9.5	13	54.6	38.7		8.9	20	32.0	55.7	A
9.0	55	2.7	6.0	A	9.4		9.9	32.3	A	9.7		52.4	24.7		9.8		57.5	37.5		9.3		47.4	19.2	
9.6		19.8	32.4		9.3		11.4	1.7		9.2		52.9	43.9		9.4	14	3.8	29.2		9.1		47.7	31.6	A
9.8		46.6	42.7		9.8		13.2	33.6		9.5		53.2	55.5		7.4		11.3	49.1	A	9.7		48.2	1.7	
9.8		46.8	37.7		9.4		32.6	50.8		9.1	8	12.7	43.4	WZ	9.7		13.0	42.5		9.3	21	12.7	20.7	
8.4		47.3	9.1	A	9.8		49.8	14.9		9.5		15.7	34.1		9.5		29.8	17.6		10		15.2	29.6	
10		50.6	47.0		8.7		54.7	7.1	A	9.0		21.1	49.6		9.4		36.1	51.2		9.8		17.1	0.7	
10	56	2.9	16.8		8.8		58.7	2.2	A	9.3		25.6	4.7		8.4		38.7	18.1	A	9.5		22.3	53.4	
9.7		3.0	56.7		9.1	2	10.1	16.2		9.8		28.8	52.2		9.7		39.2	52.6		9.0		39.8	35.3	A
8.6		12.9	31.6		8.5		13.0	46.0	WZ	9.8		45.2	41.1		9.7		40.6	0.7		9.8		40.6	52.1	
9.1		13.3	37.4		9.8		31.8	50.9		7.8		48.1	38.0	WZ	10		43.0	15.4		9.8		47.4	44.4	
9.4		14.7	46.8		9.7		43.0	24.3		9.5		51.2	41.1		9.5		56.4	24.3		9.8		48.2	41.3	
8.2		29.3	49.2	WZ	9.5		44.2	58.6		10		54.8	0.3		9.6	15	1.4	25.9		10		55.4	4.4	
9.1		30.0	16.7	A	9.5		48.4	2.5		9.1	9	1.9	34.3		9.8		6.1	42.0		9.5		59.7	7.7	
9.8		33.7	0.8		9.5		51.1	49.5		8.7		7.2	43.1		9.8		10.7	18.2		8.7	22	23.4	40.0	A
9.2		36.2	2.7		9.7		56.6	43.1		9.8		24.5	8.9		9.7		22.4	27.7		7.8		27.1	30.5	A
9.8		52.0	54.4		10		57.6	52.7		10		33.6	53.4		9.8		23.0	4.9		9.0		49.2	5.6	
8.7		57.3	13.8	A	9.5	3	3.3	28.0	A	8.7		38.2	22.7		9.3	16	10.4	51.1		9.5		50.0	11.2	
9.5	57	2.1	0.4		9.8		11.5	13.3		9.4		38.2	41.8		9.4		14.3	27.4		8.8		57.0	32.0	B
9.8		22.4	35.7		9.7		17.8	10.0		8.2		42.8	1.8	A	9.2		20.9	0.5		8.2	23	9.4	34.3	B
8.2		26.5	42.5	WZ	8.8		22.3	14.5		9.3		44.6	40.0		9.4		23.9	0.9		9.4		12.7	25.5	
9.5		30.4	30.9		9.3		36.3	53.9	A	10		53.0	10.2		9.2		25.5	35.7		8.4		14.8	33.3	A
9.5		35.3	29.3		9.3		48.8	57.5		9.8		54.4	22.3		9.5		31.6	5.0		9.8		15.1	53.4	
9.3		35.5	25.8	A	9.3	4	12.0	50.3	A	9.0	10	3.5	10.2	A	9.8		35.6	43.0		9.4		17.2	25.8	
9.3		46.9	37.5		9.4		22.4	16.0		9.1		3.6	52.9		8.0		35.9	12.6	A	8.9		18.6	53.4	
8.8		49.7	33.7	A	9.8		34.4	19.8		9.8		11.7	45.6		9.8		40.0	41.0		10		19.7	46.8	
7.5		58.8	3.5	A	9.6		35.5	59.8		9.2		21.7	35.7		9.1		40.7	16.0	A	9.7		20.1	9.7	
8.2	58	0.8	13.3	A	8.7		51.7	10.0		9.4		26.2	40.3		9.4	17	2.8	23.5		9.5		33.0	54.2	
9.5		5.0	50.2		9.2		59.0	53.4		9.5		36.8	14.6		9.2		5.9	7.0	A	9.5		34.6	15.6	
9.1		6.8	15.4		9.2	5	8.4	34.1		9.7		43.3	56.9		9.8		8.8	27.5		10		42.3	5.0	
9.7		16.7	32.2		7.1		9.0	34.0	B	9.8	11	9.2	53.9		10		9.7	36.9		9.8		49.8	8.5	
6.3		36.6	49.0	A	9.1		11.0	16.3		9.5		16.5	30.0		8.2		11.6	13.8	A	9.5		53.7	21.9	
9.4		37.6	54.5		9.8		15.7	20.0		9.5		17.4	5.8		9.3		24.6	7.5	A	9.3	24	13.1	14.9	
9.5		40.6	30.7		9.2		20.8	27.5	A	8.9		18.7	10.8	A	9.5		28.3	8.8		8.7		15.8	16.2	
9.5		46.4	44.1		9.8		26.6	54.2		8.7		27.9	25.8		9.8		40.1	11.1		9.8		18.7	58.6	
9.5		49.9	52.2		9.5		33.0	7.9		8.2		45.6	5.6	A	9.3		44.1	52.3		9.8		21.5	7.6	
9.0		50.9	23.6		9.8		34.1	58.9		8.8		52.6	58.6	WZ	9.5		50.0	24.0		8.9		23.1	17.9	A
7.3		53.9	13.9	A	9.7		41.5	8.3		10		55.2	52.6		8.7		55.5	19.5	A	9.5		24.8	30.9	
9.8		57.4	20.8		9.5		42.2	38.9		9.4	12	0.1	48.5		9.2		55.8	34.3		8.2		30.6	30.5	A
9.9	59	4.8	52.7		9.5		44.8	31.2		9.5		4.2	50.2		9.3	18	3.9	12.2	A	9.5		45.0	12.8	
9.5		24.6	4.6		8.7		58.9	2.2	A	9.8		19.0	59.8		9.7		34.4	52.3		9.1		46.7	57.2	
9.8		34.7	1.4		8.6	6	5.4	55.4	B	9.8		21.6	18.8		9.7		37.0	2.3		9.1		46.8	18.7	A
9.5		35.8	44.2	A	9.4		18.1	57.2		9.8		22.7	8.5		9.2		45.7	11.6		9.5		51.2	21.3	
9.8		39.3	15.5		9.2		19.9	49.4		9.5		40.2	40.2		9.6	19	5.2	10.1		9.0		57.7	35.1	A
9.5		47.7	56.8		8.6		22.0	30.6	A	9.8		45.6	4.5		7.0		7.1	41.5	B	9.2	25	7.1	20.5	A
9.3		53.9	19.6	A	9.5		39.7	7.4		9.6		47.5	18.5		10		7.1	32.3		8.7		13.2	26.4	A
9.8	0	3.9	56.8		9.1		40.1	34.5		9.0		54.1	18.6	A	9.6		14.0	57.4		9.4		14.6	30.8	
9.7		7.4	45.2		9.2		55.4	55.5		9.4		55.0	0.6		9.0		17.0	37.0	A	8.3		30.8	40.7	A
8.2		23.7	48.1	A	9.5		56.0	48.2		9.1		56.8	11.6	A	9.7		19.1	2.2		9.1		32.3	50.0	
9.1		26.7	54.2	A	9.5		56.8	30.1		9.8	13	0.1	41.2		9.8		24.4	16.1		9.2		36.7	11.6	
9.3		27.1	13.0	A	9.5	7	0.7	49.6		7.3		8.2	46.8	A	9.7		36.7	58.4		9.2		40.6	54.2	
9.0		28.0	44.1	A	9.1		5.5	54.8		9.8		11.3	12.6		9.7		48.7	28.2		9.8		42.2	27.4	
9.7		30.0	59.8		9.4		6.0	43.3		9.5		13.8	24.2		9.7		50.0	32.9		9.3		48.8	7.2	
9.0		32.5	14.1	B	9.1		6.2	41.5		8.7		17.2	44.1	A	9.7		51.1	45.3		9.8		59.1	43.7	
8.7		34.5	20.2	A	9.8		7.6	25.9		9.7		23.1	36.0		9.6		53.3	49.3		10	26	0.1	57.4	
10		38.9	57.5		8.5		10.6	28.0		9.5		23.5	29.9		9.0		56.7	55.6	A	10		6.6	2.1	
9.5		44.0	32.3	A	9.5		12.7	23.0		9.4		26.0	34.0		9.2	20	6.0	41.3	A	8.5		22.7	37.1	A
9.5		51.2	57.1		9.0		19.6	6.5		9.3		32.7	9.9	A	9.5		9.7	16.8		9.6		26.8	27.2	
9.2		55.7	28.9	A	8.7		28.9	12.7		9.8		47.1	9.2		9.0		22.5	42.6	A	9.8		30.6	24.7	
9.3	1	2.3	55.6		9.5		47.3	54.0		9.0		53.0	36.8		9.5		29.0	51.2		8.5		44.7	58.4	

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	7h	—21°			7h	—21°			7h	—21°			7h	—21°			7h—8h	—21°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.0	26 59.2	37.3	A	9.8	33 24.3	47.8		9.8	41 35.1	20.6		9.4	49 36.8	1.7		9.5	57 9.4	30.6	
8.7	27 3.6	58.7		10	24.9	52.2		9.5	37.4	7.4	A	9.5	40.9	23.1		9.5	12.4	30.4	
9.3	5.1	10.6		9.4	29.2	12.9		9.7	39.8	52.8		9.3	46.3	34.8		9.3	17.3	48.6	
9.0	15.3	19.7		8.2	35.6	51.6	WZ	9.0	40.1	0.1	A	9.5	48.2	6.9		9.4	19.5	20.0	
9.8	28.0	15.0		9.5	57.9	27.5		8.5	50.1	59.2	WZ	9.3	58.4	22.3		7.6	46.7	24.3	A
10	28.8	11.0		9.5	59.6	29.1		9.5	52.4	6.0		9.8	50 0.3	50.8		9.4	56.8	36.9	
5.4	50.2	59.0	B	9.8	34 3.2	37.4		9.1	55.0	24.6		9.5	7.9	22.5		9.2	57.0	39.8	
9.6	28 1.0	4.4		9.7	6.7	38.3		9.9	55.2	54.7		9.5	8.1	0.4		8.2	58 0.4	0.1	A
10	9.0	51.8		7.3	11.2	42.6	A	9.4	42 16.4	2.4		9.8	30.7	29.0		9.7	1.3	52.9	
9.8	14.6	23.0		9.3	12.2	56.7		7.5	19.5	38.9	A	9.6	41.1	1.0		9.5	10.3	49.0	
9.5	16.6	33.0		9.3	19.9	58.6		9.5	41.0	15.9		9.8	51 22.5	51.4		9.3	45.0	59.2	
9.5	26.9	47.8		8.7	26.5	36.3	A	9.5	49.2	29.2		9.1	32.8	21.0		9.0	59 6.1	13.8	A
9.8	28.6	44.7		9.4	37.7	34.6		9.1	43 2.9	51.9		9.3	44.7	1.5		9.8	6.3	29.2	
9.3	29.3	56.4		9.5	52.7	18.7		9.5	6.0	16.1		9.2	47.9	41.1		10	11.9	58.0	
9.8	42.6	21.5		9.3	57.6	9.8		9.5	25.1	44.9		9.2	48.7	42.0		8.5	26.4	27.8	
9.4	45.3	53.8	A	9.5	35 1.2	31.5	A	9.2	33.7	26.4		9.2	52 4.4	0.6		9.8	36.9	0.0	
9.8	46.4	6.6		6.8	9.9	59.7	A	9.7	36.8	34.4		8.5	14.7	5.7		9.8	41.2	44.3	
9.4	29 1.0	53.7		9.8	22.7	21.7		9.5	42.1	3.5		9.6	20.1	41.7		9.0	42.1	28.8	
9.8	2.5	29.0		8.6	28.4	1.9	B	9.7	49.8	3.1		9.8	37.7	35.0		9.8	42.5	19.2	
10	10.4	42.6		10	38.1	10.7		9.5	59.4	7.5		9.3	45.3	0.2		9.5	43.7	16.3	
9.5	11.5	16.3		9.5	41.9	31.1		10	44 1.2	55.8		9.7	47.2	38.4		9.3	0 6.9	54.5	
9.7	17.7	27.9		9.1	46.1	4.9		9.5	1.3	17.5		9.8	47.5	34.6		8.2	7.5	48.8	A
9.8	18.3	43.8		9.6	49.0	32.4		9.8	11.3	4.2	A	8.0	52.8	42.2	WZ	8.7	7.8	37.2	A
8.7	18.3	21.5	B	9.5	51.5	54.0	A	9.4	21.8	34.4		9.3	53 11.3	41.1		9.1	10.3	36.0	
9.8	24.4	14.9		9.4	58.7	52.9	A	7.7	28.0	41.4	A	8.8	13.3	33.8		9.8	13.0	54.4	
8.7	25.9	9.6	B	8.5	36 11.3	35.7	A	10	43.0	17.4		9.1	14.2	31.6		9.0	19.9	57.3	A
9.3	35.2	40.7		9.8	21.7	25.5		10	59.7	56.7		9.8	18.0	52.0		9.1	24.6	15.5	
9.5	37.6	24 1		9.3	29.2	49.8	A	9.2	45 2.4	8.9	A	9.0	19.0	29.7		8.2	28.1	13.2	A
8.1	49.0	58.4	A	10	30.4	2.2		9.7	27.3	53.2		9.5	35.3	16.7		9.8	33.2	10.7	
6.7	53.9	50.4	A	9.0	39.7	24.7		9.1	36.5	20.7		8.1	37.8	52.9	WZ	9.0	48.0	15.8	A
9.8	56.6	23.7		7.3	40.8	38.6	A	9.4	43.5	20.4		9.3	47.2	12.8		10	51.3	49.1	
8.0	58.0	35.8		9.3	44.0	52.3	A	9.4	48.2	46.6		10	47.8	39.4		9.5	53.2	56.9	
10	30 13.7	39.4		7.8	37 5.1	57.7	A	9.1	55.3	26.6		9.3	49.3	29.7		9.5	56.8	13.6	A
9.5	17.4	52.9		8.5	10.9	47.0	A	10	46 9.1	25.8		9.8	53.4	48.5		9.5	56.9	21.2	
10	18.1	22.3		9.4	17.8	16.3		8.7	13.3	37.5		9.4	54 1.5	30.3		9.3	57.1	0.1	
10	23.9	6.4		8.2	28.6	49.2	A	8.7	20.8	2.2	A	9.5	22.2	7.5		8.7	57.6	38.0	B
10	40.4	48.5		9.6	37.1	42.2		10	26.4	48.5		9.3	41.4	58.5		9.2	1 1.0	37.4	B
9.6	43.5	51.7		9.4	48.0	1.1		9.5	27.2	50.3		10	43.9	15.1		9.1	2.4	0.6	A
7.0	44.3	4.3	B	10	49.0	54.6		7.7	29.6	51.4	A	9.8	44.3	19.6		9.5	13.6	24.3	
9.3	55.1	29.1		9.2	53.0	1.3		9.4	36.4	2.8		7.7	55 1.8	56.2	B	9.3	21.6	21.8	
9.0	59.8	18.9		9.8	56.1	58.5		9.3	47.6	59.5		8.4	4.9	56.0	B	9.3	27.4	4.0	A
9.5	31 22.1	25.2		9.3	38 5.2	24.1		9.0	47 0.5	51.8	A	9.5	13.8	45.7		9.4	29.5	38.2	
9.4	30.9	6.8		9.0	7.2	28.4	A	9.7	23.2	55.1		9.0	24.7	14.3		9.5	42.4	54.9	
9.4	38.4	47.8		9.8	12.5	9.3		8.4	27.1	32.7	A	9.2	29.7	1.1		7.7	51.6	43.0	A
10	48.7	48.7		9.8	45.4	14.5		9.5	34.2	33.0		10	38.3	7.4		9.5	57.6	23.7	
9.5	51.9	6.8		9.2	49.9	6.7	A	8.9	44.4	39.3	A	9.2	38.5	21.6		9.3	2 5.4	5.9	A
9.4	54.1	34.3		8.2	57.7	52.6	A	9.5	45.7	24.5		9.8	42.5	1.8		9.4	7.4	2.8	A
9.5	54.2	17.0		8.9	39 10.5	58.3	A	9.8	48 3.9	21.1		9.5	46.5	59.4		9.0	12.5	58.9	
9.8	59.9	44.0		9.4	18.6	12.6		9.5	4.9	56.9		9.5	54.7	43.1		9.5	24.6	1.4	
9.1	32 3.2	40.2		9.1	36.1	44.5	A	9.0	7.3	37.8	A	9.1	56 2.0	44.9		8.2	31.1	16.6	A
8.9	7.9	55.3	A	9.1	44.7	24.2		9.5	7.8	33.4		9.2	2.1	17.2		9.8	51.3	55.5	
8.5	10.5	30.0	A	10	40 0.7	51.1		9.3	14.6	31.8		9.3	9.2	32.1		9.3	52.1	19.0	
9.4	15.8	50.1		9.8	2.0	4.2		9.8	44.5	0.6		8.9	10.0	48.4	A	7.5	54.7	9.0	A
9.8	16.2	31.6		9.0	2.9	14.3		9.3	49 0.9	41.3		9.4	12.1	25.7	A	9.1	3 8.6	16.1	A
9.2	23.1	32.6	A	8.0	9.6	11.4	A	9.5	2.9	26.2		8.1	18.4	51.8	A	9.3	13.0	9.9	A
9.5	31.0	20.8		9.1	13 0	39.2	A	8.5	6.3	38.6	A	9.5	27.9	0.9		9.9	15.7	52.7	
9.4	33.9	33.9		9.0	21.5	6.2	A	9.1	19.2	20.2		9.5	30.6	37.1		8.9	25.4	21.2	B
9.5	35.4	10.6		9.4	27.6	11.9		9.1	21.0	33.9	A	9.5	48.1	30.0		9.5	26.4	54.6	
9.0	42.0	1.0		9.9	41 9.5	17.8		9.4	30.9	21.2		8.8	53.5	36.4		9.4	31.8	24.4	
9.8	33 12.2	33.8		9.8	33.7	39.0		9.3	36.2	58.8		9.8	57 6.2	19.2		9.8	35.1	1.4	

2030: feuerroth

2301—2360					2361—2420					2421—2480					2481—2540					2541—2600				
	8h		−21°			8h		−21°			8h		−21°			8h		−21°			8h		−21°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.4	3	49.5	57.0		9.1	10	42.2	10.4	A	9.7	18	28.8	27.3		9.6	27	7.1	26.1		9.5	33	19.3	41.2	
9.5		53.0	33.9		8.7	11	1.8	23.1	A	9.7		29.8	53.0		9.4		11.1	32.9		9.5		21.5	34.4	
9.5	4	10.4	2.3		9.6		11.6	57.3		8.5		40.9	9.7	A	9.4		19.5	30.0		9.7		45.6	26.1	
9.1		15.0	32.5	A	10		21.2	48.8		9.1		50.1	38.0		10		20.4	23.0		9.8		45.8	1.4	
9.1		16.6	26.2	A	9.6		25.1	32.7		9.0		54.7	47.2		9.4		27.3	29.5		10	34	11.4	30.1	
9.8		26.8	58.7		8.7		28.4	20.9	A	7.0		56.6	39.8		7.9		31.1	32.3	A	9.7		41.7	7.0	
9.7		37.2	24.5		9.8		46.0	7.4		8.5	19	0.7	6.0	A	9.0		39.3	1.5		9.8		59.3	22.0	
9.5	5	3.1	3.6		9.5	12	1.3	59.5		9.5		20.2	1.1		10		44.4	57.5		7.2	35	9.8	40.5	A
8.7		27.0	19.2	A	9.1		11.3	29.4	A	10		23.5	39.3		9.5		51.6	14.8		9.5		13.8	42.0	
10		27.0	56.3		8.7		13.7	37.1	A	9.0		27.6	54.2		10	28	14.2	52.0		9.3		19.0	20.1	
9.8		27.2	58.3		8.5		22.9	7.4	B	9.8		30.7	5.3		9.8		17.6	20.6		9.8		19.4	56.0	
9.4		34.3	51.9	A	8.5		26.5	40.9	A	9.2		34.0	53.8		10		22.2	21.8		7.7		28.4	30.5	A
8.7		42.3	33.9	A	9.5		26.7	29.3		9.5		37.4	58.1		9.7		33.2	46.8		9.3		40.7	34.1	
9.1		43.9	9.1		9.1		30.8	44.2		9.4		37.9	48.9		9.0		33.9	4.1		9.8		50.0	17.4	
9.5		49.1	47.4		9.1		40.4	47.4	A	9.5		47.1	2.9	B	9.0		37.4	43.8	A	8.9		57.6	59.2	
9.2		51.1	20.3	A	8.8		52.8	34.4	A	9.7		56.4	23.0		9.5		39.9	18.7		9.7	36	6.8	20.6	
10		54.7	55.2		9.4		57.1	52.9		9.8	20	4.6	2.5		9.8		40.5	8.4		7.7		8.7	51.9	A
9.3	6	8.8	6.7		9.6	13	8.6	3.7		8.5		7.7	5.4	A	6.8		41.5	45.0	A	8.3		9.0	3.6	
9.0		17.5	25.7	A	9.5		11.9	6.1		9.0		29.8	9.0	A	9.1		44.1	52.7	A	9.7		23.7	34.6	
9.4		20.9	25.4		9.0		14.1	53.9		9.5		30.4	54.3		9.5		45.4	31.0		8.8		36.1	42.8	
9.4		22.2	7.5		9.1		14.7	48.1	A	9.3		30.7	22.5		9.4		51.7	22.4		9.1		43.1	18.1	
9.4		22.8	17.9		9.7		27.5	52.4		9.4		36.4	16.0		9.8		52.6	41.3		8.3		49.3	28.7	
9.1		26.8	11.8		9.8		29.1	19.5		9.0		45.7	58.3		9.7	29	7.0	17.1		10	37	3.5	46.1	
9.8		35.9	37.4		9.7		55.9	25.1		9.0	21	0.5	41.7		9.6		9.3	29.0		9.9		4.6	38.6	
10		43.8	8.0		9.4		57.5	32.1		9.5		3.2	22.4		9.6		13.3	29.5		9.6		15.4	39.4	
9.5		45.1	12.0		9.8	14	2.8	2.0		9.1		6.6	56.2		9.6		25.0	25.6		9.5		28.9	3.0	
8.6		54.9	57.6	A	9.3		5.9	47.5	A	10		31.9	54.1		9.0		25.8	29.6	A	9.0		33.3	7.8	A
9.5		59.1	9.3		10		6.5	21.0		9.6		40.7	27.3		9.6		30.5	25.7		9.0		44.9	5.3	
8.8	7	2.3	7.5	A	8.3		9.1	17.2	A	9.0		50.7	26.5	A	9.3		36.3	19.1		8.0		52.0	7.1	A
9.7		2.3	55.2		9.5		25.0	26.3	A	9.5		51.0	8.3		10		38.2	7.9		8.7	38	1.3	10.5	A
9.4		12.5	31.0		9.8		27.4	8.7		8.7		51.9	50.7	A	9.7		38.6	44.0		9.6		6.5	59.3	
9.5		18.2	43.5		8.2		34.2	59.3	A	9.5	22	3.2	17.8		9.6		40.9	59.2		9.7		12.7	42.1	
8.4		24.7	54.2	A	9.6		39.3	26.6		9.8		6.2	18.9		8.9		51.5	28.7	A	7.8		21.2	46.4	
9.1		31.2	58.1	A	9.8		53.0	29.5		9.4		29.3	36.6	A	9.1		51.6	40.4		9.4		22.3	26.6	
9.8		44.0	41.9		9.5	15	15.1	48.4		9.4		35.3	35.5		10		55.8	30.4		9.4		29.9	27.5	
9.5		57.7	56.4		9.1		19.2	39.4		9.0		40.4	51.1	A	9.1	30	0.1	28.8	A	9.8		46.7	0.4	
9.0	8	16.6	52.7	A	9.5		20.2	7.4	A	9.4		52.7	13.0		9.6		4.3	58.8		8.6	39	10.0	44.0	
9.3		37.3	2.8		9.5		37.1	20.2	A	9.5		54.4	38.9		9.6		30.7	4.2		9.4		23.2	35.8	
8.2		38.4	13.6	A	9.4		42.7	35.2		8.9		58.5	18.4		9.6		49.3	38.8		9.4		31.2	55.9	
9.7		41.0	58.6		9.5		47.9	12.5		9.8		59.7	59.3		9.5		50.3	52.3		9.7		46.0	43.4	
9.1		41.9	17.6	A	9.4		53.6	50.3		9.7	23	35.6	24.0		9.8		51.8	56.4		9.4		59.9	49.4	
9.4		49.8	10.3	A	9.2		58.2	51.2	A	9.2	24	0.1	57.9		9.8		58.0	48.6		9.0	40	2.2	21.1	
9.7		56.2	29.2		9.7	16	11.0	59.5		8.8		9.2	55.1	B	9.0	31	4.1	1.4	A	9.7		5.2	38.6	
9.4		56.9	41.2		9.4		11.4	8.8	A	9.7		14.7	24.2		10		13.3	35.1		9.7		10.0	16.8	
9.8	9	19.7	6.4		8.4		15.2	40.4	A	9.7		21.5	59.0		9.5		15.5	37.4		9.5		13.4	32.4	
10		27.8	29.5		9.2		15.7	5.0	A	9.7		23.1	50.9		9.8		22.4	21.2		9.8		25.6	16.4	
9.4		35.0	42.0		8.8		18.1	40.2	A	9.5	25	5.7	9.4		9.4		42.3	47.6		8.5		29.5	7.9	
8.7		45.9	3.6	A	9.5		21.9	26.2		10		25.1	27.4		9.0		50.2	26.5	A	9.0		32.9	50.2	
10		56.0	19.4		9.0		35.1	7.3	A	10		25.6	24.7		8.7		50.4	40.0		9.1		47.1	8.4	
9.8		59.0	37.5		8.7		51.8	7.1	A	9.4		38.4	38.6		9.8		53.9	50.4		10		47.3	58.2	
9.6	10	1.5	38.4		9.8		53.0	0.4		8.9		40.0	6.0	A	10	32	4.0	1.4		9.0	41	11.8	2.5	
9.8		5.0	43.1		9.7	17	11.0	18.7		9.6		50.3	49.2		9.2		9.8	14.3		8.9		17.6	22.0	
9.5		9.6	47.1		9.1		20.5	9.5	A	9.8		56.9	33.9		9.8		11.0	39.6		9.7		22.8	52.7	
9.4		15.2	3.2		9.3		20.8	3.5	A	9.2	26	31.5	51.6		9.2		19.8	14.5		9.8		31.5	54.4	
9.8		18.0	3.1		9.4		32.9	8.8	A	9.8		34.2	3.5		8.1		35.0	34.6	A	9.0		36.1	44.0	
9.8		19.0	54.8		9.8		40.1	33.4		8.5		34.6	15.5	A	9.4		53.8	17.0		8.8		38.8	52.0	A
9.2		20.1	29.3		8.2		57.0	54.8		8.0		46.8	49.3	B	9.0		56.9	56.6		8.5		55.3	21.4	A
6.8		23.2	26.0	A	9.8	18	2.7	18.7		8.4		53.2	58.0	B	8.1	33	3.1	25.0	A	9.5	42	13.5	56.0	
9.5		38.5	57.9		9.4		17.6	54.8		9.4		53.5	24.6		9.3		6.1	12.0		9.7		39.1	58.2	
8.7		39.3	49.0		9.4		22.5	33.1		9.5	27	4.1	24.9		9.5		16.4	56.1		9.6		40.6	57.2	

2601—2660

m	8h m	s	−21° ′	
-4	42	49.4	20.6	A
-3	43	20.1	22.6	
-0		39.0	24.2	
-5		51.4	17.0	
-0		53.2	21.5	A
-3		56.9	30.2	
-2	44	13.4	55.0	
-7		13.5	43.1	A
-0		22.0	38.8	A
-7		36.6	49.1	B
-4		37.9	3.0	
9.5	45	1.2	3.7	
9.8		1.4	32.4	
9.2		27.1	26.3	
8.7		29.9	42.8	A
9.7		36.2	3.6	
9.0		38.6	22.1	
9.5		47.8	31.0	
9.0		49.9	44.2	A
8.8	46	12.7	10.8	A
9.8		25.8	23.0	
8.7		26.9	44.6	A
7.7		38.5	34.1	A
9.5	47	3.4	56.3	
9.2		7.6	23.1	
9.4		9.5	1.0	
9.5		34.2	20.8	
9.5		36.0	57.2	
9.5		47.6	56.5	
8.8		47.8	16.1	
10	48	4.0	1.0	
9.5		16.3	19.0	
9.4		20.4	48.4	
9.1		24.4	52.2	
9.4		31.2	38.1	
9.5		41.3	37.6	
8.3		54.1	11.5	
9.8	49	5.3	43.5	
8.5		19.7	2.1	A
8.5		20.2	16.0	
9.5		21.8	33.8	
9.8		22.7	55.7	
9.3		25.9	25.8	
9.5		48.2	15.8	
9.4	50	4.5	7.2	
9.5		6.2	36.5	
9.5		18.4	0.8	
8.1		22.0	57.9	A
9.3		23.9	51.0	
9.7		43.3	36.3	
9.4	51	0.4	20.2	
9.8		28.6	15.8	
9.2		32.5	11.3	
10		55.2	43.5	
9.0	52	3.3	0.3	
9.7		8.7	59.7	
9.8		27.1	17.7	
9.0		39.7	28.3	
9.1		40.6	22.1	
10		42.9	25.7	

2661—2720

m	8h—9h m	s	−21° ′	
8.4	53	14.2	34.4	A
9.3		28.9	4.0	
9.5		36.8	30.8	
8.2		56.0	55.1	B
9.6	54	0.5	58.4	
9.6		2.7	50.9	
9.5		9.4	7.5	
8.3		32.2	26.1	
8.3		50.9	50.0	A
8.7		53.5	30.4	
9.0	55	24.9	58.1	A
9.8		38.0	14.7	
9.5		44.5	17.9	
9.1		52.6	23.2	A
9.3	56	17.3	51.2	
9.0		35.3	0.0	A
9.4		52.5	20.1	
8.5		58.4	36.5	A
9.5	57	26.4	37.7	
9.8		30.2	30.8	
8.5		42.8	24.3	
9.5		43.4	48.9	
9.1		43.6	0.2	A
9.5	58	0.1	32.1	
9.4		15.5	22.7	
9.5		23.4	48.6	
8.9		26.4	27.8	
9.8	59	15.5	34.4	
9.8		31.6	7.0	
9.8		40.2	34.6	
9.5		47.0	49.1	
8.1		56.4	47.9	A
9.0	0	3.7	19.8	A
9.1		7.8	47.6	
9.4		8.9	45.5	
9.3		12.1	22.9	A
9.5		13.6	40.5	
9.4		16.8	53.5	
9.1		34.2	56.1	
9.9	1	18.2	23.0	
8.7		33.4	28.8	A
9.4		59.5	8.3	
9.4	2	8.7	31.0	
8.6		11.2	23.5	A
9.0		23.8	48.2	
9.3		32.5	12.1	
9.8		52.5	26.3	
9.1	3	6.3	43.0	
9.6		7.9	29.0	
9.8		12.9	26.9	
8.9		14.9	6.8	
9.8		46.1	23.1	
9.3	4	0.6	50.9	
9.3		3.6	57.1	
9.0		20.5	8.8	A
9.2		21.8	34.0	
9.2		23.8	28.2	
9.5	5	1.7	53.4	
9.4		3.9	49.5	
9.0		16.8	38.7	

2721—2780

m	9h m	s	−21° ′	
9.4	5	21.6	34.6	
9.8		31.6	57.0	
9.5	6	4.4	9.6	
9.8		13.9	11.2	
9.0		16.1	13.7	A
8.8		16.5	56.1	A
9.8		33.4	17.0	
9.7		50.2	31.7	
9.7		53.0	22.6	
9.4	7	8.3	7.4	
8.7		22.2	28.7	
9.8		34.9	23.2	
8.9		35.5	10.7	A
9.4	8	1.0	54.0	
8.2		18.1	41.1	B
9.8		20.8	14.2	
9.6		25.1	32.1	
9.7		26.0	34.4	
9.5		39.3	11.4	
9.7		54.5	25.0	
9.2		55.0	30.9	
9.4	9	11.0	27.0	
9.4		35.9	55.5	
9.8		55.2	11.0	
7.3	10	15.8	21.0	A
9.8		23.6	58.3	
9.8		24.5	27.2	
9.8		24.9	48.7	
9.0		32.9	52.7	
9.3	11	7.0	44.7	
8.5		11.2	9.7	B
9.1		32.4	47.2	
8.8		32.8	22.2	
9.7		46.3	22.0	
9.6	12	32.8	23.9	
7.5		34.7	56.8	B
9.2		37.5	1.8	
9.1	13	21.3	5.4	A
9.2		28.8	56.9	A
9.5		36.3	43.9	
9.8		40.7	37.3	
10		43.7	41.5	
9.8		46.1	11.5	
9.8		49.4	25.3	
9.5	14	22.6	20.2	
9.1		34.3	40.0	
9.4	15	0.6	26.7	
9.3		2.7	54.0	
9.3		19.8	52.5	
9.2		39.2	0.4	A
9.3		40.3	34.6	
8.8		44.8	59.2	
9.4		45.3	37.3	
8.2		55.6	54.0	B
9.2		57.5	9.9	
10	16	16.0	5.9	
9.8		20.1	56.7	
9.5		24.0	6.3	
9.3		24.6	24.9	
8.7		28.1	19.3	A

2781—2840

m	9h m	s	−21° ′	
8.5	16	46.2	36.7	
8.0		56.9	11.9	A
9.4	17	8.8	2.6	A
9.2		46.4	30.1	A
9.7		56.5	57.3	
9.8	18	25.2	14.7	
9.8		46.7	38.7	
9.8		52.5	56.3	
9.0	19	11.0	19.5	
9.8		17.7	51.2	
9.1		18.2	30.5	
9.4		20.1	34.3	
9.8		28.7	25.0	
8.7		30.3	29.8	
9.5		40.9	16.8	
9.2		48.4	16.0	
8.6		56.9	17.4	
9.9	20	12.3	42.3	
9.5		12.8	3.0	
8.5		20.7	20.9	
9.5		21.6	41.8	
4.7		40.0	42.3	B
9.7		47.8	35.1	
10		59.2	17.2	
9.5	21	13.1	47.6	
9.3		14.3	23.6	
7.3		17.5	53.9	B
9.8		35.5	34.6	
10		40.5	19.2	
9.3		46.1	29.8	
9.5		50.8	39.0	
9.3	22	1.9	50.8	
10		4.3	11.7	
9.1		48.2	3.6	
8.5		49.0	26.4	
9.7		59.2	27.6	
9.1	23	9.3	20.8	
9.0		13.0	40.4	
7.9		25.0	30.5	
9.0		42.0	31.6	
9.7		42.2	24.8	
9.1		43.5	34.8	
9.5	24	1.1	3.3	
10		5.8	23.6	
8.3		13.6	4.5	
8.8		31.4	39.7	
9.5		42.4	8.9	
10		43.2	12.1	
9.3		45.7	26.6	
9.3		51.4	36.2	
9.3		58.9	3.9	
10	25	8.7	20.1	
9.0		13.6	7.6	
9.0		40.3	43.8	
10		47.3	42.6	
9.8		54.6	9.2	
9.1		56.1	35.6	
9.2	26	9.5	7.2	
9.5		14.1	16.4	
8.8		15.7	56.2	

2841—2900

m	9h m	s	−21° ′	
8.0	26	19.2	52.7	
8.8		35.9	56.9	
8.8		58.9	56.0	
9.3	27	3.4	30.3	
9.2		30.6	12.5	
9.9		46.0	5.4	
8.8		51.1	52.4	
9.0		56.0	0.7	
9.8		59.7	34.2	
9.5	28	9.0	25.9	
9.5		14.2	53.9	
9.5		18.1	23.7	
8.9	29	2.3	52.0	
8.2		7.6	17.8	
9.8		14.4	6.8	
9.5		18.5	14.9	
9.7		22.7	39.9	
9.4		30.4	4.0	
7.5		36.6	20.9	
9.8		50.6	25.0	
8.5		54.1	47.0	
9.5	30	16.7	38.7	
9.8		26.6	47.8	
9.4		29.4	2.2	
9.4		32.6	52.9	
9.1		41.0	53.4	
9.8		46.7	36.0	
9.8	31	14.9	52.6	
9.9		24.2	0.4	
9.5		57.3	46.3	
9.7	32	0.2	39.6	
9.8		26.9	59.6	
9.8		30.8	9.4	
9.2		32.7	22.0	
9.2		36.5	26.1	
9.5		59.4	15.2	
9.5	33	9.9	16.0	
9.0	34	8.1	57.0	
9.2		14.4	24.5	
9.8		16.9	50.5	
9.8		17.6	32.4	
8.2		46.2	8.0	
10	35	16.4	6.2	
10		20.7	7.6	
9.7		26.5	32.1	
9.3		48.4	39.1	
9.3	36	11.9	41.9	
9.1		27.4	26.8	
7.8		32.9	39.7	
8.8		42.3	27.5	
9.5		50.8	55.9	
9.3	37	2.4	5.2	
10		2.9	2.8	
9.6		20.7	24.5	
9.1		37.5	44.3	
9.5		47.1	4.2	
8.8		57.3	17.7	
9.0	38	2.3	23.8	
9.0		12.2	47.2	
9.5		48.3	40.4	

2802: 40°48 42′37″8 B_8, Ep. 1870.88

2901—2960				2961—3020				3021—3080				3081—3140				3141—3200			
9h		—21°		9h—10h		—21°		10h		—21°		10h		—21°		10h		—21°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.2	39	6.3	0.1	9.2	52	24.1	57.8	8.9	9	45.2	51.2 A	9.6	23	12.0	31.4 A	10	37	30.3	20.0
8.7		11.7	5.5	9.5		54.6	41.7	8.0		50.3	45.6 A	9.1		40.9	46.7 A	9.8		35.0	46.8
8.8		34.7	45.7	9.7	53	38.6	59.7	9.9	10	43.8	17.7	9.4		42.8	51.4	9.8		46.3	26.1
7.8		37.6	58.6 A	9.5		55.1	20.8	9.2		51.2	56.0 A	8.8	24	9.8	49.4 A	9.8		49.1	6.7
8.5		44.8	39.5	9.8	54	0.6	25.9	10	11	11.0	8.1	9.0		50.3	4.8	9.0		50.5	47.3 A
9.4	40	5.7	47.4	9.5		12.6	26.2	9.5		19.5	39.6	9.8		52.4	20.5	9.5		51.5	30.2
7.7		25.1	1.8 A	9.5		32.3	35.4	9.8		40.9	7.1	9.1		55.7	4.6	10	38	21.1	56.7
9.6	41	3.1	26.6	9.5		48.5	32.0	9.4		41.9	55.5	8.3		57.1	26.7	9.2		39.6	52.4
9.5		23.0	56.6	10		55.9	59.0	9.8		47.9	1.5	9.6	25	48.7	36.0	9.0	39	6.1	50.8
9.8		28.7	49.2	9.5	55	17.0	47.2	8.2	12	13.0	14.4 B	9.1		51.2	1.8	9.8		21.6	14.7
9.9		51.4	6.2	9.8		23.4	7.5	9.8		17.6	57.1	7.0	26	0.3	47.0	10		32.7	53.6
7.2	42	6.5	20.5 B	9.4		48.5	54.9	10		19.0	8.2	8.5		18.2	2.9 A	8.0	40	24.0	5.0
9.5		16.8	53.7	7.3	56	0.8	24.0 A	9.5		40.5	37.3	9.0		20.2	13.0	9.1		26.8	31.2
9.3		16.9	24.8	9.5		48.0	45.7	9.8		44.3	1.8	9.5		26.8	19.7	8.2		32.1	35.1 A
8.8		21.7	32.4	9.8	57	19.3	4.6	7.8		56.9	47.5	8.5		30.7	50.0	9.8		40.0	55.7
8.9		41.7	15.1 A	7.8		32.4	51.5 A	9.4	13	8.9	28.8	9.8		47.1	4.0	10		59.1	24.6
9.8		43.7	59.7	9.6		34.8	11.5	9.4		24.0	45.3	9.8	27	0.0	20.3	9.0	41	22.5	42.5 A
9.3		50.6	9.1	9.5	58	27.8	10.4	8.5		24.9	53.8	9.8		15.8	25.7	8.7		41.4	39.1 A
8.8		52.2	6.3 A	9.5		50.4	51.1	10		25.0	22.2	9.0		42.7	15.8	9.9	42	8.5	18.8
9.8	43	38.2	33.2	9.6	59	16.5	38.0	9.8		28.3	13.2	7.3		46.1	27.0 B	9.3		28.0	26.2
9.5	44	1.8	45.5	9.0		45.3	41.4	9.8		30.0	6.4	9.5		59.7	21.4	8.6		29.7	24.1 A
9.4		40.4	12.2	9.4	0	4.3	34.8	9.7		38.9	6.9	9.4	28	32.4	26.2	9.8		34.3	5.1
9.8		56.4	55.9	9.8		6.7	12.7	9.5		54.5	37.3	9.2		53.7	34.0	9.8		53.5	25.8
9.5	45	0.3	4.6	9.0		12.3	48.5	8.9	14	20.8	13.1	9.7	29	3.0	12.8	9.9	43	25.4	10.8
9.3		34.2	32.6	9.5		25.1	33.8	6.7		44.4	47.5	9.0		4.0	4.9 A	9.6		32.9	22.7
9.1		58.5	28.9	9.4		35.8	22.5	9.5		54.2	58.7	10		18.2	31.7	10	44	5.3	2.7
9.5	46	4.8	10.6	7.0		44.8	46.8 A	10	15	5.9	28.7	9.7		27.1	56.8	9.3		18.6	31.6
9.3		13.3	15.8 A	9.5		57.2	35.4	10		21.8	59.5	9.0		40.2	22.8 A	7.8		40.1	18.2 B
9.5		40.5	13.7	9.3	1	0.9	44.9	9.4		38.7	32.0	7.2		55.1	54.9 B	9.8		41.8	33.6
9.5		55.8	2.8	9.7		12.6	35.2	9.8	16	21.1	27.9	9.8	30	27.5	0.2	9.5		44.3	43.0
9.4		58.9	10.1	9.7		13.2	0.6	9.1		27.3	33.1	9.8		36.3	55.6	9.2		57.2	24.8
9.5	47	1.8	53.0	10		13.8	3.1	9.0		54.9	27.2	9.8		38.9	33.1	9.3		57.9	37.4
8.8		6.4	51.4 A	9.2		19.6	39.1	9.6	17	27.4	43.5	9.3		55.4	7.8	9.1	45	4.8	55.5 A
9.8		24.8	15.7	8.2		26.3	36.5 A	9.8		33.6	8.4	9.9	31	2.0	44.2	9.6		24.4	32.9
6.0		48.1	48.2 A	9.0		43.6	45.8 A	9.5		35.9	54.5	9.8		13.0	15.4	9.4		47.7	51.7
9.5		48.8	22.0	9.4		46.7	35.2	9.0		36.2	44.5 A	9.6		20.9	3.8	9.3		52.8	50.9
9.1		52.4	43.5	8.3		58.0	3.0	9.2	18	7.0	33.8	9.0		29.0	7.7	8.9	46	4.8	15.7
8.8		54.5	30.2	8.3	2	50.5	32.7	9.4		10.1	46.4	9.8		51.5	42.9	10		32.4	16.9
9.8	48	0.8	11.2	9.5	3	27.6	21.0	9.5		16.7	41.0	9.2	32	9.0	46.0	9.4		42.8	28.2
9.8		12.7	8.8	9.3		49.1	52.0	9.8		33.8	1.7	9.2		23.4	12.7	9.3	47	1.0	48.7
8.3		21.9	39.2 A	9.3		58.7	41.9	7.8		41.1	12.8 A	9.4		29.5	21.5	9.3		2.1	4.5
9.4		36.8	17.8	9.2	4	2.6	56.4	10	19	9.6	4.6	7.5		44.9	46.2 A	10		32.3	20.5
9.8		41.9	37.6	9.2		40.5	17.8	9.8		23.2	15.6	9.7		46.2	17.7	9.4		40.2	10.8
9.4	49	1.2	19.6	9.5		42.8	26.1	9.5		25.2	36.0	9.8	33	2.1	26.2	9.4		40.7	35.3
9.0		5.8	9.2	9.2		48.6	18.5	8.9		41.4	0.6 A	9.8		2.1	57.4	9.4	48	37.4	29.0
9.2		38.9	42.1	8.0	5	3.5	54.8 A	9.3		56.1	17.3	10		35.0	53.7	9.1		49.8	32.1
9.5		44.1	42.1	8.8		17.7	34.3 A	9.4		59.0	9.7	9.5		36.8	7.1	10		50.7	27.0
9.1		48.7	44.9	10		19.0	0.4	9.8	21	3.5	43.0	9.8		45.0	22.0	9.2		53.0	2.8
9.4		50.7	39.0	9.4	7	2.9	5.3	9.5		18.1	17.8	9.8		48.8	3.4	9.1	49	30.1	37.5
9.5	50	8.2	22.5	8.3		12.3	26.2	9.8		44.7	29.2	9.9	34	11.8	5.2	9.8		33.1	15.5
9.2		29.4	30.0	9.6		16.4	49.8	8.9		45.0	39.5	9.4		24.1	35.5	10		43.0	0.5
9.7		37.8	42.3	8.6		18.0	19.6	8.8		50.4	55.5	9.4		39.3	51.8	7.7		48.6	15.7 B
9.8		38.5	5.6	7.8		46.8	0.6 A	8.6	22	7.8	30.8 A	9.4		50.3	11.1	9.8	50	3.3	29.5
9.5		39.4	52.5	8.8	8	7.2	30.5	9.8		8.9	41.9	9.5	35	12.7	45.1	9.4		50.9	11.9
9.5		54.6	14.1	9.7		9.9	26.5	8.8		14.4	50.8	9.0		39.5	28.1	7.2		51.7	14.5 A
9.8	51	8.0	48.8	9.1		25.9	24.3	9.3		19.8	33.3	10		47.3	14.9	9.1		54.0	41.5
7.8		55.3	38.1 A	9.8		54.3	52.2	9.3		21.2	54.9	8.0		57.2	44.8	9.8	51	30.1	21.7
8.2	52	19.3	29.9 A	8.9	9	12.5	56.0	9.8		36.3	7.2	10	36	7.3	24.9	9.8		41.3	24.5
9.3		21.0	26.9	9.5		17.8	40.3	7.5		43.7	30.1 A	9.5		29.2	54.2	9.0		56.9	10.8 A
9.1		21.8	9.8	9.0		34.4	22.0	7.2		48.0	17.7 B	9.5	37	0.2	52.0	9.0	52	31.4	11.3 A

SU Hya

3073: 7:88 30′48″.6 B_1, Ep. 1885.30

3201—3260				3261—3320				3321—3380				3381—3440				3441—3500			
	10^h—11^h	—21°			11^h	—21°			11^h	—21°			11^h	—21°			11^h—12^h	—21°	
a	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
0	52 39.9	11.1		10	4 57.7	58.2		9.9	22 53.2	44.8		9.5	40 1.7	7.3		9.1	53 3.1	23.4	
8	55.5	25.9		9.5	5 20.4	2.5		9.4	23 12.2	59.1		9.9	31.2	6.4		8.5	5.1	4.2	A
2	53 6.3	2.4		9.8	37.8	29.0		9.1	38.6	45.5		9.7	37.5	28.7		6.2	18.5	1.3	B
8	15.8	10.7		7.7	6 11.7	15.4	A	9.0	38.9	59.6		9.3	45.7	17.1		9.7	40.7	18.5	
0	18.3	44.4		9.8	17.8	43.2		9.4	52.6	28.5		9.2	41 34.1	2.1		9.6	46.5	54.7	
.1	18.7	26.2	A	9.5	53.2	11.0		9.8	24 1.3	34.8		9.5	50.1	26.1		8.8	54 9.9	38.5	
.6	23.1	25.2		9.5	7 15.7	2.8		9.6	41.5	57.7		9.3	50.4	40.6	A	9.5	12.5	1.6	
.2	36.3	33.4		9.2	17.2	57.4		9.1	25 30.0	11.5		9.7	55.6	32.1		8.8	15.4	47.0	
.8	40.6	25.2		9.3	31.2	22.7		9.5	53.5	7.1		8.5	42 0.2	17.4	A	9.8	26.8	50.9	
0	43.3	58.1		9.7	38.1	35.3		9.5	57.1	26.7		9.5	36.1	50.4		9.5	40.7	29.6	
.9	54.8	1.0		9.4	54.2	17.8		8.3	26 27.4	39.4	B	9.0	59.0	42.8	A	9.5	47.3	36.8	
.0	54 42.8	3.7	B	8.8	55.9	31.5	A	8.7	28.9	0.6	B	9.2	43 22.1	12.5		9.8	51.1	18.4	
0	43.3	30.2		9.2	8 13.5	37.1	A	9.4	50.4	29.4		9.8	22.8	3.3		8.9	53.8	39.2	A
.8	48.0	51.6		8.9	40.4	30.4	A	10	27 0.4	39.5		8.2	28.1	20.3	A	9.8	54.0	24.4	
.2	58.6	22.1	B	9.5	55.9	24.6	A	10	28.9	37.9		9.1	28.7	38.3		9.8	55 3.0	15.5	
.3	59.7	7.8		8.3	9 3.5	12.7	A	10	35.9	12.7		9.5	29.6	12.2		10	3.8	9.8	
.5	55 2.7	6.2	B	8.3	14.3	12.6	A	9.1	56.8	5.8		8.6	38.8	35.2	A	9.3	8.9	0.4	
.8	48.0	59.0		8.3	36.8	5.0	A	9.1	28 39.6	30.6		9.4	44 29.5	54.9		9.5	19.9	33.7	A
.9	59.8	17.0		9.6	10 23.9	23.6		8.5	50.4	41.3		10	51.8	20.5		9.9	24.5	34.5	
.5	56 24.2	27.6		7.2	37.3	21.0	A	9.8	29 3.3	45.1		9.5	53.0	7.5		9.3	34.2	25.3	
.1	25.1	18.7		9.6	41.2	17.3		9.8	29.8	8.2		9.8	45 8.5	50.6		7.5	35.0	20.6	B
.5	35.7	1.2		8.0	45.4	38.7	A	9.1	31.9	12.5		9.0	15.5	21.9	B	9.0	43.9	6.5	
.7	57 4.3	31.0		9.2	11 29.9	21.5	A	9.1	38.8	51.3		8.8	16.2	12.7	A	7.7	56 47.1	33.7	A
.8	27.1	55.5		9.8	34.3	9.9		9.2	30 46.3	11.6	A	9.7	19.7	28.9		9.8	57 2.8	57.8	
.5	34.9	35.8		8.3	12 29.8	25.9		9.4	31 21.0	4.5	A	9.6	29.0	23.6		9.8	21.0	18.3	
10	38.6	13.3		9.3	31.7	55.9		9.7	21.7	27.9		9.7	36.0	32.2		9.1	31.8	2.2	A
.8	41.2	47.0		8.8	34.6	6.5		9.4	28.8	28.6		9.4	50.5	14.7		9.4	41.3	47.3	
.8	50.3	24.8		9.8	39.2	53.1		9.3	34.2	39.5		9.8	59.4	54.4		9.5	43.4	11.8	
.8	53.8	36.3		9.0	51.7	20.2	B	8.8	32 13.2	48.0		9.4	46 2.5	23.5		9.0	58 3.1	37.6	
.8	58 17.2	59.8		9.5	13 17.8	32.4		9.4	21.4	55.7		9.5	23.9	11.6		9.8	21.6	3.8	
.8	31.2	26.3		9.3	14 14.8	43.1		9.5	21.9	57.6		9.6	30.0	14.5		9.6	21.8	10.0	
.7	34.0	19.0	A	7.0	34.7	18.4	A	8.9	57.6	17.5	A	9.9	47 1.5	2.9		10	48.8	10.3	
.7	52.7	18.6		9.5	40.0	35.6		10	58.4	54.9		8.9	4.3	3.7	A	7.2	49.3	59.5	B
.7	58.1	18.6	A	9.5	44.5	56.2		8.7	33 14.4	31.6	A	8.2	10.4	5.5	A	9.5	51.3	29.4	
.6	59 5.1	41.2	A	9.6	15 5.6	21.8		9.8	19.6	35.4		9.2	20.9	48.4		9.8	59 34.7	2.0	
.5	36.2	21.3		9.0	32.1	17.3	A	9.8	55.1	40.4		9.9	23.5	18.2		8.0	44.5	34.1	A
.8	42.2	34.7	A	9.3	49.5	3.7		9.3	34 11.7	26.6	A	9.9	31.9	13.8		9.0	0 27.6	59.1	
.3	0 11.0	53.2		9.3	16 10.9	3.8		9.4	23.3	57.4		8.8	45.3	28.9	A	8.2	36.6	26.7	A
.6	21.8	18.2		9.8	12.9	1.4		9.1	27.2	54.3	A	9.5	55.7	38.0		9.4	45.0	16.1	A
.2	24.5	10.8	A	7.5	17 12.1	17.5	B	8.5	31.6	51.0	A	9.1	48 7.3	34.6	A	9.0	45.1	46.1	
.8	1 3.0	46.4	A	9.5	36.4	13.3		8.9	35 0.5	2.7	A	9.0	17.2	37.2	A	9.1	52.9	29.7	A
.3	29.6	22.7	A	9.5	48.9	4.8		9.1	1.0	50.2	A	7.7	33.4	22.5	A	8.6	1 0.1	51.0	
10	36.9	19.8		10	18 15.1	21.1		9.3	8.0	5.1		9.4	35.8	5.3		10	14.2	18.9	
9.0	38.4	16.1	A	10	18.1	18.9		9.6	9.3	42.8		9.8	55.7	15.4		8.5	19.5	42.9	A
10	40.2	21.5		9.8	34.0	45.1		8.8	12.5	43.5	A	8.7	49 6.6	15.0	A	9.5	54.7	25.2	A
8.9	45.5	17.5	A	9.4	38.4	20.5		9.6	26.1	18.8		9.4	6.9	7.6		9.1	2 37.4	38.6	A
9.1	49.3	2.7	A	8.5	50.3	12.0	A	9.5	26.4	59.8		9.5	38.0	11.2		2½	41.1	48.6	A
9.1	50.1	6.5	A	7.7	19 1.5	53.3	A	9.5	36 20.3	2.6		9.9	40.3	11.2		9.9	3 15.6	15.8	
9.3	2 24.4	3.0	A	9.5	16.8	11.1		8.5	45.4	44.8	A	9.8	42.4	18.1		9.5	44.7	34.6	
10	34.6	23.5		8.2	51.7	25.5	A	9.9	37 28.0	59.2		10	47.4	13.7		8.3	4 9.1	19.0	A
9.0	46.3	51.5		9.4	55.3	11.7		9.0	38 5.9	21.7		10	53.5	9.5		8.8	45.8	42.6	A
9.1	52.8	52.3		10	57.0	54.1		9.0	6.4	25.7		7.2	54.8	43.8	B	9.7	5 24.5	27.6	
9.2	57.9	15.3	A	9.6	20 7.4	58.7		9.2	8.7	26.2		9.2	50 0.6	38.6		9.5	49.0	10.3	
9.1	3 9.8	50.1		9.8	29.8	59.4		9.8	16.9	23.3		9.8	0.7	53.6		9.1	7 18.5	35.2	A
9.3	27.4	4.3	A	8.8	50.6	57.1	A	9.6	53.3	3.4		9.6	44.3	38.3		9.7	57.6	55.6	
10	28.4	41.3		7.5	21 35.3	35.8	A	9.8	56.4	36.0		10	45.9	39.0		9.7	8 18.9	8.2	
9.8	28.4	40.0		9.7	22 21.9	20.8		9.5	39 12.9	49.0		9.2	59.3	48.2	A	8.0	19.8	15.0	A
9.5	29.8	4.6		9.8	23.7	16.7		9.1	31.3	43.6		9.8	52 2.4	25.6		9.1	20.9	8.5	A
10	56.5	29.2		9.4	25.8	47.1		8.5	50.9	38.5		9.9	13.1	3.2		9.4	23.4	59.9	
9.0	4 24.8	17.1	A	10	31.7	39.3		9.7	40 1.3	31.6		9.5	39.5	49.5		9.1	27.5	0.9	A

3308: 1ʰ46 53′11″8 B_1, Ep. 1885.30 3397: 38ʰ63 35′35″2 B_2, Ep. 1885.30

3501—3560				3561—3620				3621—3680				3681—3740				3741—3800			
	12h		−21°		12h		−21°		12h—13h		−21°		13h		−21°		13h		−21°	
m	m	s	′		m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
8.5	8	27.6	41.7	A	9.8	25	33.3	38.1	9.5	45	32.4	30.3	8.0	8	17.5	8.6	A	7.8	29	7.8	6.6	A
10		57.3	15.9		9.4		35.9	27.8	9.9	46	10.2	3.4	9.5		32.4	29.4		9.0		24.7	11.1	A
9.8	10	1.6	34.3		9.0	26	15.0	37.9	9.3		21.3	1.2	9.8		55.9	31.0		8.9		40.7	28.9	
8.3		10.2	8.7	A	9.2		19.4	16.7	9.3	47	1.9	28.3	8.0		57.6	1.1	A	9.7	30	20.1	25.2	
8.8		59.7	33.1	A	9.1		25.5	26.5	9.4		12.1	46.1	8.9	9	12.1	15.8	A	9.2		25.2	26.0	
9.7	12	16.5	41.2		9.2	27	3.4	11.0	9.1		34.8	22.9	9.8		19.2	59.0		9.7	31	7.2	8.8	
9.5		21.7	12.3		9.5		4.3	2.2	8.9		41.7	55.8	8.3		35.6	58.6		9.7		42.6	59.4	
8.7		24.1	22.8	A	9.3	28	12.0	45.7	9.3	48	42.0	58.1	9.3		59.4	27.1		9.5		56.8	28.1	
9.5		36.2	26.5		9.9		57.6	19.6	9.7		43.0	45.8	9.2	10	11.0	38.2		9.6	32	7.3	39.2	
10		38.8	38.8		8.7	29	8.4	33.2	B	9.4		51.0	30.0	9.3		24.4	57.5		8.5		11.8	53.6	A
6.5		40.6	21.9	A	9.0		21.3	2.1	A	9.5		52.2	21.5	9.5		45.7	2.4		9.8		48.4	26.4	
9.7		51.6	56.2		9.8		54.8	37.7		9.5	49	6.1	35.3	9.2	11	5.8	17.8		9.1		57.9	2.7	
9.3		52.3	52.5		10		59.1	25.0		9.3		20.5	54.6	9.8		12.3	9.7		9.8	33	35.2	24.4	
5.0	13	3.5	24.3	A	9.8	30	2.9	56.5		7.0		27.6	22.7	A	9.8		28.5	58.5		9.5	34	20.5	2.7	
10		3.6	59.0		9.7		5.4	20.9		6.3		50.0	58.0	A	9.8	12	0.7	33.2		8.0		24.0	18.3	A
10		10.0	2.6		9.2		16.0	23.6	B	9.8	51	13.6	7.6		9.5		7.7	40.0		9.8		35.7	33.3	
9.8		17.2	59.1		9.4		20.6	24.9		9.3		14.3	39.5		8.3		40.5	21.9		9.0		52.1	53.4	A
8.6		18.5	31.3	A	8.5	31	23.8	49.1		10		31.6	2.3		9.6		46.6	38.4		9.5		56.7	43.1	
9.4		25.5	4.2		9.4		31.9	8.3		7.9		42.3	20.7	A	9.4		59.7	30.1		9.1	35	12.6	51.1	A
9.6		26.8	34.1		9.0		40.2	51.7		9.5		43.6	58.8		7.3	13	11.6	36.9	A	8.2		22.3	37.9	B
10		56.1	38.1		9.4	32	2.1	5.8		9.1	52	4.5	16.6	A	8.1		14.8	2.6	B	9.7	36	6.6	42.2	
8.7		58.0	37.8	A	9.8		7.7	12.6		10		46.4	33.8		9.5		15.8	34.0		9.2		29.1	12.3	
9.3	14	6.8	47.5		10		35.0	22.6		8.2		46.6	0.1	A	9.4	14	47.7	30.1		9.8		30.0	2.4	
9.4		8.0	31.6		9.4		38.1	31.7		8.5	53	46.7	39.5	A	9.0	16	20.5	43.1		9.5		43.9	27.9	
9.2		16.0	15.7	A	9.3		48.1	16.5		8.9	54	23.7	37.9		9.1	17	3.7	45.9		9.8	37	6.6	46.0	
9.5		18.5	22.6		9.4		50.6	8.0		9.3		46.1	52.0		9.0		48.0	56.0		9.2		44.7	29.0	
10		48.1	26.8		9.5	33	38.0	7.6		9.5	55	41.0	29.9		9.5	18	8.8	7.0		9.2	38	11.4	7.5	
9.3		57.4	38.7	A	9.2		38.0	55.2		9.0	57	9.8	47.8		9.4		13.6	24.4		9.2		20.7	58.3	A
9.3	15	19.5	19.8		9.0		45.6	38.4		9.5		23.2	33.2		9.8		19.2	22.4		9.8		44.8	46.1	
8.8	16	3.0	57.8	A	9.1		57.5	23.8		7.7		49.7	17.2	A	9.5		41.8	2.3		8.9		54.3	12.2	A
8.5		38.9	15.5		9.6		59.4	25.3		9.8	58	51.5	38.8		9.7		49.5	42.2		9.7	39	36.8	18.0	A
9.5		44.4	14.6		9.8	34	10.8	59.3		9.3	59	25.7	13.7		8.2		50.1	32.1		9.2		41.0	7.2	A
9.2		50.3	59.9	A	8.5		18.1	55.8	A	9.8		35.5	42.7		9.4	19	11.8	45.4		8.9		49.2	24.9	A
9.2	17	6.8	1.5		9.0		33.5	10.0	A	9.5	0	14.2	45.0		8.2		14.5	36.5	A	10	40	4.5	20.4	
9.8		52.0	26.3		9.5		51.0	46.6		9.5		15.6	29.4		9.7		31.5	30.2		7.7		31.9	26.0	A
10		59.3	8.3		9.5	35	33.1	53.5		9.4		57.4	51.9		10		54.5	54.7		9.4		40.3	6.1	
9.7	18	33.9	28.7		10		40.4	14.0		9.5	1	34.1	34.7		9.8	20	8.4	40.3		9.4		41.3	57.7	
10	19	6.0	51.5		9.5	37	54.3	10.2		9.4		37.6	4.6		7.7		19.4	39.2	B	8.2		59.9	59.5	A
10		6.4	55.2		9.5	38	8.3	36.6		9.6		49.8	39.9		9.2		22.4	39.0		9.1	41	32.8	3.0	
9.8		13.7	15.4		7.5		13.3	50.1		7.4		54.5	24.2	B	9.8		35.8	50.6		9.8		49.8	8.1	
7.7		30.9	35.0	A	9.5		31.1	58.7		9.5	2	35.0	52.7		8.7		38.4	40.6	A	7.8	42	0.5	22.3	
9.4		42.2	15.0		8.9		40.2	15.1	A	8.0		37.4	35.4	B	9.2	21	5.0	24.2		9.2		22.5	36.9	
9.1		43.2	12.3		8.7		55.0	54.8	A	9.2		58.1	45.5		8.5		46.7	36.9	A	9.9		39.1	14.0	
8.6	20	12.8	35.8	A	9.4	39	0.8	9.0		8.8		59.8	25.8		9.8		50.1	6.8		9.8		58.9	53.7	
9.0	21	10.1	4.9		7.7		22.8	20.0	A	9.5	3	9.9	7.1		9.5		58.1	36.7		9.0	43	19.3	21.6	A
8.9		32.0	55.5	A	9.1		28.8	34.1		9.5	4	20.5	12.0		9.6	22	53.0	17.5		9.8		23.6	18.0	
9.8		48.8	51.3		8.8	40	22.9	52.5	A	9.6		31.0	34.5		9.9	23	2.1	2.6		9.8		53.4	11.2	
9.6	22	0.1	19.5		9.4		52.1	12.2	A	9.2		58.3	7.0		9.5		3.9	27.1		9.0	44	21.6	3.5	A
9.0		4.6	15.2		9.8		56.5	51.4		9.0	5	32.0	53.2	A	9.7		48.2	32.3		9.9		52.0	20.1	
9.4		6.3	48.0		9.0		59.2	42.2		9.8		33.5	30.2		9.5	24	35.6	35.8		9.8	45	38.7	7.1	
9.0		9.2	40.4		9.4	41	15.7	15.2	A	9.7		53.4	42.8		9.9		45.5	10.8		9.6		55.9	25.7	
8.5		29.1	4.2	A	8.3		43.7	36.2		9.2	6	2.7	47.0		8.9		52.8	26.2	A	9.5		59.8	44.0	
9.5	23	24.5	3.2		9.8		59.0	53.3		7.7		11.5	35.5	A	9.5	25	6.5	30.9		8.7	46	4.4	31.0	
9.7	24	19.6	25.5		9.1	42	9.1	9.3	A	9.8		54.5	43.9		9.5		40.6	33.1		9.0		8.0	12.0	
9.4		33.4	15.3		8.6		12.9	35.7		9.8		57.8	22.5		9.1		53.2	54.8	A	9.7		9.5	30.1	
9.5		33.7	54.6		9.2	43	37.6	25.5		9.4	7	7.4	35.9		7.5	27	28.9	52.6	B	9.4		10.0	10.7	
7.8		50.5	22.0	A	9.3	44	6.0	2.1		9.6		18.7	55.6		9.1		32.0	44.8	A	9.2		10.3	56.0	
9.4		59.1	37.7		9.3		7.8	34.3		9.8		55.8	12.3		6.5		37.8	17.0	A	9.3		14.9	44.2	
9.3	25	3.9	29.5		9.4		9.0	20.9		9.8	8	8.1	48.5		8.5		52.0	38.6	A	8.6		24.9	16.3	
8.6		32.6	54.2	A	9.5	45	5.1	25.8		9.6		10.6	23.7		10	28	40.1	57.5		6.7		29.0	31.4	

3801—3860					3861—3920					3921—3980					3981—4040					4041—4100				
	13h—14h		—21°			14h		—21°			14h		—21°			14h—15h		—21°			15h		—21°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.6	47	0.4	15.4		9.9	4	0.4	40.2		9.6	23	42.7	46.9		10	44	35.1	4.6		9.1	0	43.5	41.1	A
9.0		26.0	34.2		9.8		3.4	34.6		9.8	24	49.5	29.9		9.5		35.5	12.4		9.1		44.6	39.6	B
9.5		43.6	45.1		9.1		48.2	1.2		9.9		54.3	2.7		9.5		47.8	23.8		9.5	1	11.5	30.4	
9.0		51.4	39.7	A	8.0	5	36.8	47.2	A	9.3	25	8.8	42.2		9.0		53.6	6.6	A	8.8		11.8	0.4	A
9.5	48	27.4	35.5		9.1		51.1	36.5		9.5		25.0	28.7		8.3	45	2.2	0.1	A	8.8		25.1	10.8	Wz
9.5		29.6	10.9		9.8		55.3	48.1		9.4		40.9	27.6		9.5		4.2	33.8		9.8	2	24.4	9.5	
9.0		31.6	48.5	A	9.8	6	30.5	11.4		9.1		41.8	39.8	A	8.5		27.1	7.0	A	9.1		32.6	29.8	A
9.4		52.9	28.1		9.8		42.0	17.7		9.3	26	1.1	14.5		9.8		30.9	22.9		8.5		42.9	30.9	A
9.1	49	23.4	36.2	A	7.9	7	0.7	53.0	B	7.5		12.2	45.3	A	9.8		45.6	53.5		9.4	3	4.7	17.7	
9.3	50	21.3	5.8	A	9.8		32.7	54.4		9.5		12.7	8.2		9.7	46	1.4	7.2		9.1		42.8	49.0	A
9.5		31.2	47.6		9.8		54.8	43.4		9.5	27	5.9	26.5		9.8		14.4	50.6		10		47.4	41.0	
9.6	51	15.2	15.9		9.4	8	2.3	35.1		10		7.2	2.6		9.5		18.1	38.1		9.5	4	32.9	42.8	
8.5		50.3	38.5	A	9.6		28.4	5.7		7.5		54.7	32.6	A	9.5		24.5	2.7		9.3	5	35.0	36.7	
9.6	52	11.1	58.1		9.4		36.4	13.5		10	28	41.0	22.2		8.0	48	6.5	23.8	B	9.1		35.2	40.6	A
9.8		35.7	26.3		9.6		44.6	22.9		7.9		49.8	30.1	A	10		16.0	39.2		9.4		40.9	45.0	
9.8	53	10.6	14.4		9.2		52.3	24.5	A	9.3	29	7.7	42.5		9.8		19.7	42.3		9.0		57.8	55.8	Wz
8.9		51.7	10.8		7.5	9	6.1	6.8	A	9.0		32.8	24.7	A	10		19.9	43.8		10		58.0	27.0	
9.5		57.9	16.4		9.5		9.9	45.0		9.4	30	1.7	0.3		9.2		25.6	52.5		9.8	6	5.8	13.8	
9.0	54	47.7	0.5	A	7.0		34.5	8.9	A	9.8		6.0	7.6		9.3		41.0	27.3		10		5.8	31.1	
9.1	55	9.9	41.6		9.8	10	0.1	42.4		9.0		36.0	54.7		7.7	49	7.2	33.4	B	10		14.2	31.0	
9.1		11.3	58.2		9.3	11	34.9	11.8		8.0		40.6	42.0	A	10		12.7	58.9		9.4		22.8	57.3	Wz
9.4		25.7	38.2		9.6		36.5	20.9		8.3	31	38.5	2.5	A	9.5		20.4	7.2		9.1		23.4	2.6	
9.7		45.8	28.3		9.6		50.6	46.1		9.1	32	18.5	46.5	A	9.8		37.2	21.9		9.0	7	4.9	3.2	
6.5		48.1	43.4	B	9.0	12	52.3	15.0	A	9.8		26.9	11.4		7.5	50	19.9	48.8	A	9.5		13.5	18.7	
9.1		52.5	55.3		9.8	13	10.8	1.5		9.8		44.2	19.4		9.3		24.8	2.6		6.0		59.1	51.6	A
9.7	56	1.6	32.9		9.3		19.1	20.5		7.3		50.6	59.3	A	10		34.9	9.7		9.6	8	13.6	54.7	
9.8		5.4	51.0		9.8		48.3	9.5		9.4	33	11.8	20.9		9.4		56.3	51.0		9.5		30.0	20.0	
8.4		8.6	3.2	A	9.1	14	22.6	18.7		9.8		53.6	59.3		9.7	51	24.1	16.6		9.5		38.9	31.8	
9.8		22.7	29.3		9.8	15	15.0	59.1		9.3	34	12.5	36.6		8.3		35.5	25.1	A	9.0		44.3	15.7	Wz
8.7		23.8	4.0	A	9.0		31.9	2.0		9.7		58.9	24.1		9.5		39.8	9.6		10	9	3.4	47.7	
7.5	57	0.4	55.1	B	8.0		48.4	2.8		9.5	35	18.8	19.5		9.1	53	7.4	39.5	A	10		19.0	47.0	
9.7		4.4	59.0		9.8		56.5	49.6		9.1		19.3	47.0		9.8		34.5	22.2		8.8		22.3	2.2	Wz
9.7		12.6	4.2		9.5	16	6.1	20.4		8.5		53.7	20.7	A	9.2		58.8	19.9	WZ	9.6		40.2	7.9	
9.3		21.0	12.4	A	9.3		15.0	3.4		9.2	36	21.0	37.7	A	9.6	54	1.1	23.6		9.8	10	8.1	17.0	
9.9		31.2	33.5		9.2		42.3	51.6	A	9.7		37.1	30.8		8.0		10.0	26.4	A	9.4		25.2	36.3	
9.9		39.8	37.0		9.0		49.4	55.2	A	8.8		39.5	13.8		8.9		27.1	15.6	B	9.4		37.5	17.4	
9.0		54.5	54.2	A	9.5	17	9.4	51.1		9.5	37	12.0	8.5		9.5	55	26.6	11.9		9.8		43.4	19.1	
9.8	58	3.4	11.8		7.7		45.9	27.7	B	9.5		19.1	48.5		9.2		29.6	56.8	WZ	10		47.4	1.7	
9.3		10.9	50.8		8.5	18	9.9	54.3	A	7.8		28.3	47.7	A	9.3		53.8	30.8		9.5	11	2.9	15.7	
9.4		31.9	40.8		9.1		43.1	27.5		9.8		52.5	25.0		9.8		55.4	39.5		9.8		14.6	49.0	
9.6		35.1	36.4		8.0		43.9	12.6	B	7.8	38	12.0	47.1	A	9.8	56	7.4	21.6		9.3		28.5	25.1	
9.1		35.5	39.6		9.1		47.3	0.7		8.9		29.4	33.4		9.8		7.5	25.7		9.6		43.0	56.2	
9.7	59	16.7	23.1		8.9		48.5	35.4	A	9.8		31.6	15.4		9.6		29.5	58.7		9.3		45.7	3.8	
9.6		47.2	15.4		9.3	19	6.8	49.6		8.8		36.0	51.5		9.0		34.5	39.7	WZ	9.1		53.0	55.1	Wz
8.6		55.9	30.2	B	9.2		16.7	54.2		9.6	39	2.7	15.6		9.3		50.6	53.7		9.5		55.3	16.6	
9.8	0	51.8	16.4		7.2		23.3	20.3	A	9.7		7.2	13.9		9.1	57	10.7	39.8		9.0	12	1.6	43.8	B
9.2	1	1.6	56.7		9.8		36.9	56.3		9.8	40	37.5	16.8		9.1		24.7	37.0		9.8		3.9	14.6	
8.0		7.3	50.8	B	9.8		44.7	2.9		9.4		44.5	15.0		7.6		41.5	50.5	WC	9.8		31.8	21.4	
9.8		14.9	47.7		9.2		53.1	56.6		9.0		50.1	52.4	A	8.5	58	4.2	16.9	WZ	9.3		34.2	49.4	
10		20.5	24.3		9.8	20	10.0	44.9		9.5	41	15.3	32.5		6.5		5.3	27.5	A	9.0		41.7	41.3	B
9.5		25.5	23.5		10		20.0	11.6		9.0		41.2	38.2		9.8		12.3	3.3		9.0		53.4	32.3	Wz
9.4		31.4	4.4		8.3		22.3	20.4	B	8.8		56.3	57.9	A	8.9		16.4	31.5		9.0	13	8.6	48.7	A
9.9		39.0	39.7		7.9		24.6	37.1	A	9.2		57.9	11.6		9.7		46.2	55.2		9.6		11.4	57.5	
9.8	2	5.5	56.8		9.1		33.1	27.7		9.0	42	19.2	44.7		10		57.0	54.0		9.8		34.1	4.5	
9.8	3	4.8	18.7		8.8		50.7	58.4	A	9.8		24.1	7.6		9.5	59	40.9	11.4		9.5		44.3	30.5	
9.8		6.6	44.1		9.5	21	1.2	6.1		9.6		47.9	33.8		8.0		59.7	32.1	A	9.4	14	10.8	6.3	
9.2		11.1	24.9		7.0	22	28.0	48.7	A	9.5		57.1	45.0		9.3	0	19.2	14.3		9.4		50.7	52.6	
9.3		19.1	23.9	A	8.6		41.0	54.5	A	9.6	43	15.2	28.3		9.6		23.3	19.1		8.8		55.2	9.3	A
9.1		33.6	45.6	A	9.0	23	29.6	15.5		8.6		27.4	28.2	A	9.0		35.0	50.2	A	9.3	15	14.5	20.0	
9.8		58.8	46.7		9.5		42.0	41.8		8.9	44	6.1	6.4		8.8		41.4	10.0	WZ	9.6		20.1	37.5	

4009: 35:35 24′55:3 B_2, Ep. 1884.37

4101—4160					4161—4220					4221—4280					4281—4340					4341—4400				
	15h		—21°			15h		—21°			15h		—21°			15h—16h		—21°			16h		—21°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.8	15	28.0	49.7	B	9.8	31	36.8	21.1		9.5	45	40.5	55.7	WZ	9.4	59	46.4	49.2		6.8	12	8.6	29.3	A
9.4	16	26.8	23.8		9.2		37.0	55.9	WZ	10		47.1	40.1		9.5		48.5	14.0		8.3		45.5	45.3	A
7.5		32.5	31.4	A	9.5	32	0.4	14.9		9.0		57.8	8.1	WZ	var	0	1.6	8.3		9.2	13	19.8	7.8	
7.7		57.5	24.4	A	10		7.7	21.8		9.5	46	37.0	17.1		8.8		42.3	33.3	A	9.5		34.0	49.5	
9.6	17	10.2	3.5		8.1		17.2	7.9	B	9.0		43.8	50.3		10	1	6.7	7.9		8.3		35.7	18.0	A
9.0		30.0	45.2		10		21.0	2.5		9.8		58.6	5.0		9.5		30.9	12.0		9.5		43.1	18.0	
9.5		52.5	14.3		9.1		31.9	37.0		8.4	47	35.3	6.1	B	7.3		46.4	45.8	A	9.5		53.3	24.8	
9.4	18	13.8	14.5		9.5		50.1	51.5		8.6	48	8.2	36.2	WZ	9.5		48.9	57.9		9.9	14	43.6	17.6	
8.5		17.5	59.4	A	9.5		50.3	54.9		9.0		8.2	22.7		9.2		53.3	50.8		9.8	15	9.6	16.1	
9.6		41.9	7.7		9.2		50.8	15.3		8.5		19.2	47.5	WC	9.2	2	6.9	16.1	WC	9.5		26.6	30.0	
8.9		42.2	22.1	WZ	10	33	1.6	34.9		9.5		33.3	13.5		8.8		15.0	48.8	A	8.0	16	17.3	53.6	A
9.3		55.8	46.9		8.1		41.3	25.7	WZ	8.8		37.2	9.3	WZ	9.5		42.7	3.5		9.4		42.5	35.1	
9.3	19	3.3	9.3		9.9	34	0.3	8.6		7.0		43.2	3.3	B	10		53.8	58.4		8.5		48.6	20.8	A
10		27.5	47.2		9.1		1.5	28.8		9.8		50.1	51.5		9.5		57.3	12.6	WC	9.8	17	3.0	22.5	
9.5		52.6	36.1		9.6		19.0	20.4		9.0	49	9.6	37.6		9.5		57.9	34.4		9.4		9.5	11.8	
9.4	20	0.8	41.6	A	9.0		27.9	26.7	WZ	9.5		14.7	17.0		9.6	3	31.3	54.5		8.8		54.2	27.9	A
9.0		1.5	9.8	WZ	9.5	35	29.2	16.2		9.6		42.1	31.6		9.0		34.9	0.1	WZ	9.8	18	14.3	13.9	
9.7		3.2	56.2		9.1		50.8	54.6	A	10		44.0	23.3		10		50.6	17.6		9.4		19.7	21.5	
9.5		6.0	38.9		10		55.3	58.0		9.4	50	13.2	42.6		9.5	4	14.2	27.9		9.3		32.6	51.0	
8.9		8.4	18.0	WZ	8.3	36	28.4	21.2	A	9.5		13.9	16.8		9.4		27.2	56.3		7.5		39.3	47.0	B
9.5		14.0	16.8		9.8		36.4	37.3		9.4		16.1	28.8		9.5		43.8	50.9	A	9.4	19	44.4	27.0	
9.3		20.1	18.9		9.8	37	7.4	54.2		9.5		43.2	35.7		9.1		48.8	35.4	WZ	9.8	20	4.9	46.5	
9.5		52.1	7.9		9.8		12.7	59.7		9.1		56.5	56.1		9.3	5	1.9	32.4		9.6		6.1	26.4	
9.7	21	21.9	36.6		9.5		17.5	14.4		9.5	51	16.6	47.7		9.5		7.9	39.5		9.2		8.2	53.6	A
9.8		51.1	4.8		9.5		41.5	20.6		9.4		32.9	1.9		7.0		9.4	1.5	B	9.5		12.0	29.6	
9.3	22	3.5	48.3	WZ	9.5	38	37.8	58.8		9.5		36.1	57.3		9.3		28.8	42.8		7.8		45.2	14.4	A
9.8		9.9	37.7		8.8		40.7	4.7	A	9.1		51.2	4.7	WZ	9.2		34.7	47.5	A	9.5		52.5	39.8	
7.8		17.6	22.7	A	9.4		41.5	12.1		9.4		57.9	54.3		7.5		46.6	45.0	A	8.8	21	11.9	7.3	A
8.6		19.3	41.2	A	10	39	10.4	38.2		9.1	52	9.1	50.2	A	9.5		57.9	44.4		9.8		14.0	31.8	
9.6		19.6	26.9		10		10.4	36.4		8.5		35.0	45.3	A	9.4		58.0	28.3		9.8		16.0	19.7	
9.3		38.3	23.7		9.3		15.5	3.3		9.5		49.8	25.0		9.7	6	1.8	26.0		9.8		17.2	21.6	
9.8	23	21.0	20.3		9.1		27.1	11.7	A	9.8	53	1.3	55.5		9.4		4.3	31.0		9.6		17.9	30.4	
9.8		24.0	42.8		9.7		38.3	53.9		9.2		3.1	18.2		9.4		17.8	21.0		9.4		19.7	13.6	
9.8		35.7	44.6		9.2		52.5	43.0	WZ	10		12.1	29.7		9.2		32.4	12.8		9.4		33.9	45.1	
7.3		43.8	27.9	A	9.8	40	13.4	23.8		7.3		24.1	34.1	B	9.3		36.8	45.3		9.8		37.7	19.2	
9.8		44.1	14.4		8.8		38.4	51.2	WZ	9.5		35.4	17.1		9.4		48.8	24.8		9.5		55.4	25.5	
9.2	24	15.0	18.0		7.0	41	27.2	2.5	A	10		46.2	45.5		8.7		54.9	12.9	A	9.2	22	5.0	8.2	
9.8		26.3	4.0		9.2		29.1	8.1		9.5	54	5.0	40.2		10	7	8.3	25.4		10		35.5	22.5	
9.3		40.8	30.7		9.3		47.6	49.2		9.8		43.1	41.1		9.7		13.1	34.7		9.8		46.4	30.0	
9.8		48.9	26.2		9.5		51.3	52.5		9.6		46.6	6.7		9.5		13.8	20.0		9.0	23	15.0	13.0	
10	25	10.0	0.7		9.8	42	26.5	43.7		9.0		54.5	48.4		9.5		23.1	34.9		5.5		33.4	8.9	A
9.4		58.1	15.3		9.1		27.7	55.8		9.5	55	12.3	55.3		9.9		47.0	49.6		10		46.0	2.3	
9.8	26	0.0	13.3		9.4		31.1	30.1		9.3		27.1	34.1		9.5	8	20.7	15.4		9.2		52.7	26.7	
9.5		0.2	28.9		9.3		56.9	2.5		8.7		32.9	30.9	A	10		29.3	5.6		9.7	24	45.0	3.2	
8.3		3.5	25.6	A	9.6	43	31.4	12.5		9.6		36.0	24.8		9.8		37.4	7.4		9.5		56.9	39.4	
9.8		35.8	35.5		9.3		32.2	36.9		9.6	56	37.5	21.4		9.8		44.5	12.7		9.0		57.4	2.4	A
9.2		44.9	39.4	WZ	7.3		39.2	14.4	A	9.3		39.5	38.2		9.3		55.2	48.2		10	25	49.3	50.0	
7.5	27	40.4	15.3	A	9.7		41.9	5.5		9.5	57	6.5	53.1		8.4	9	12.2	32.2	A	9.9	26	46.8	10.4	
10	28	15.9	5.1		9.6		45.4	11.7		7.5		10.6	26.0	A	9.5	10	5.4	26.7		8.2		52.6	34.2	WZ
9.3		16.4	33.1		9.5	44	1.3	36.1		9.1		29.4	20.1		8.3		7.0	13.8	A	9.8	27	55.5	19.8	
9.3		36.1	43.6		9.5		18.5	32.5		9.0		38.0	10.7		9.4		7.3	24.0		8.0	29	0.8	45.4	A
7.0	29	3.6	38.2	WC	9.4		33.8	14.0		9.3	58	2.2	46.0	WZ	9.5		8.5	22.5		9.8		23.7	22.7	
9.0		24.1	7.8	WZ	9.3		40.9	24.5		9.5		2.7	23.0		9.8		23.7	52.2		9.5	30	9.3	9.6	
9.5		30.6	45.6		8.2		51.3	31.9	WC	9.1		16.8	31.3	A	8.6		56.2	3.2	A	8.5		22.2	44.9	A
9.3		37.7	35.2		10		58.6	23.2		8.0		18.3	28.2	A	9.6	11	3.3	55.2		8.8	31	14.2	42.7	
10		47.7	43.3		10	45	3.0	21.8		8.8		44.5	40.4	A	9.5		16.7	27.7		9.0		45.9	37.8	
8.2	30	7.0	7.3	B	9.0		3.8	19.2	A	9.7		59.4	34.1		9.7		38.7	39.8		9.2		50.6	52.2	
9.8		20.7	15.5		9.3		13.3	9.6		9.7	59	0.6	13.8		8.5		54.2	9.2	A	9.5	32	1.1	43.8	
8.2		32.2	59.3	WZ	9.1		15.3	17.9	A	8.2		14.0	1.2	A	9.1		54.9	5.9	A	8.8		21.7	23.1	WZ
9.4	31	36.6	51.0	WZ	10		30.2	48.1		9.5		42.0	6.5		10	12	2.9	17.0		9.7		24.2	18.1	

4401—4460

m	16h m	s	−21° ′	
9.2	34	18.5	56.5	
9.2		21.3	29.7	
8.0		26.2	4.2	A
9.0		30.1	24.5	A
9.5		39.6	9.7	
9.7	35	12.5	56.0	
9.8	37	11.1	45.7	
9.4		11.2	25.7	
9.5		24.7	48.7	
9.5		41.9	48.5	
9.5		47.0	57.6	
9.0	38	45.8	30.7	A
9.6		47.6	52.7	
8.8		50.1	54.3	A
9.2	39	20.7	53.6	A
9.3		22.0	48.6	
9.3		32.9	15.6	
9.0		36.4	9.8	A
9.3		40.3	51.5	
8.0		56.2	40.5	A
8.5	40	23.0	7.8	A
7.0		56.8	35.4	A
9.0	41	24.2	42.3	A
9.8		51.3	28.2	
9.8		51.5	10.7	
8.8	42	13.7	57.1	A
9.2		29.7	53.2	A
8.0		52.4	24.0	B
9.5	43	4.8	33.6	
9.0		18.4	5.0	A
9.5		20.1	17.6	
9.5		43.8	54.7	
9.8		49.9	40.8	
9.4	44	1.4	30.9	
9.5		4.6	29.3	
9.4		14.4	3.0	
9.3		25.4	50.4	
8.8		37.3	25.8	A
1.eb		41.8	54.6	
9.1		53.4	37.5	
9.1	45	35.3	2.5	A
8.0		59.6	48.4	A
7.3		59.9	37.8	A
9.4	46	20.8	22.5	
8.5		27.4	43.4	B
9.0		44.0	26.3	A
9.5		47.8	17.9	
9.4		52.9	28.0	
6.5		53.2	19.6	A
9.4		56.2	27.8	
9.5	47	17.0	19.2	
9.5		28.9	43.9	
9.2		34.7	19.1	
9.3		38.8	48.4	
9.2		38.9	8.0	
9.4		50.9	19.1	
10		57.8	53.2	
8.5	48	6.5	33.7	A
9.2		13.2	32.1	
9.5		48.2	57.6	

4461—4520

m	16h m	s	−21° ′	
9.8	48	48.6	46.1	
8.2	49	3.2	32.5	A
8.4		20.1	9.5	WZ
9.3		22.7	54.7	
8.8		23.6	23.1	A
9.5		52.3	53.4	
9.6		55.7	53.8	
9.8	50	5.4	8.2	
9.2		6.8	32.5	A
9.5		33.2	56.8	
9.0		38.3	16.2	A
9.5		53.6	35.8	
9.5		53.7	45.1	
9.2	51	0.8	13.4	A
9.1		12.3	20.0	A
9.0		20.6	55.4	WZ
9.3		41.2	54.5	WZ
7.0		50.6	13.8	A
9.4	52	6.2	18.1	
9.5		7.0	23.0	
9.4		46.7	50.2	
9.6		50.9	31.3	
9.5		54.2	36.1	
9.4		57.8	42.8	
9.5	53	0.8	24.9	
9.7		1.7	41.6	
9.5		9.6	49.5	
9.2		13.3	10.1	
9.3		21.8	4.7	
9.5		30.9	27.8	
9.5		46.6	47.3	
9.8	54	36.8	24.2	
9.0		58.3	10.8	WZ
8.9	55	4.1	11.7	WZ
9.3		5.6	46.1	
9.0		8.3	18.4	WZ
9.8		30.3	13.8	
10		34.6	44.3	
9.5		35.8	22.3	
9.8		46.2	39.3	
9.8		53.3	22.9	
8.8	56	2.4	33.8	
9.1		27.5	47.7	A
9.5		31.0	20.9	
6.9		48.8	51.9	A
9.3		52.0	29.9	
9.5	57	0.1	5.4	
7.2		4.8	3.7	A
10		20.8	42.3	
9.8		21.5	12.0	
9.0		32.3	6.7	WZ
6.0		33.1	21.1	A
8.5		35.8	3.2	A
9.6		56.7	33.7	
9.5	58	4.8	10.0	
9.2		16.3	39.1	
9.5		44.4	33.7	
10		47.9	30.7	
9.8	59	0.2	56.0	
9.5		27.8	7.4	

4521—4580

m	16h—17h m	s	−21° ′	
9.5	59	49.7	8.5	
9.8	0	21.8	18.7	
9.7		25.2	32.6	
9.8		41.4	51.6	
10	1	1.1	59.0	
9.0		11.3	35.8	A
10		13.9	16.9	
9.5		16.7	36.6	
9.7		35.7	12.8	
10		37.8	27.2	
9.0		40.7	24.0	A
9.5		42.6	47.3	
9.9		57.2	25.5	
8.5	2	2.2	48.9	WZ
9.5		25.6	45.2	
9.6		29.8	34.0	
9.5		32.0	33.2	
9.2		36.7	2.3	A
8.7		38.7	10.8	A
8.5		44.7	42.4	A
8.9		50.5	59.2	WZ
9.5	3	13.7	41.8	
8.5		24.6	36.1	A
6.8		59.3	25.7	A
9.2	4	18.7	20.5	A
9.8		57.1	26.0	
9.2	5	24.2	14.7	
9.8		31.2	9.6	
9.8		40.7	2.9	
8.2		41.2	11.1	A
9.5	6	1.6	49.7	
9.3		16.1	53.3	
8.9		18.7	52.4	A
8.7		24.7	45.3	A
8.2		27.2	11.8	A
9.5		38.2	12.7	
8.9	7	13.6	46.2	A
9.5		22.1	29.9	
7.0		43.4	40.8	B
9.4		43.8	34.8	
9.5	8	6.5	52.9	
9.5		39.6	15.1	
9.5		47.1	23.4	
9.3	9	42.6	17.3	
9.5		54.2	30.9	
9.2		56.4	53.4	
8.8		58.2	25.9	WZ
9.8	10	0.5	50.8	
9.5		4.5	43.9	
9.7		9.6	15.7	
9.5		17.9	3.6	
9.0		32.6	59.7	
10		48.3	57.0	
9.5	11	8.4	47.1	
10		15.8	34.8	
9.2		16.4	9.6	
8.7		17.9	22.4	WZ
9.6		23.6	58.7	
10		27.7	19.9	
9.3		42.6	26.5	WZ

4581—4640

m	17h m	s	−21° ′	
9.5	12	3.6	10.2	
9.5		17.1	28.9	
9.5		17.2	3.1	
9.8		20.6	30.7	
9.0		22.1	14.3	A
9.4		33.6	38.4	
8.6		41.3	24.3	A
9.0		52.4	47.2	A
9.1	13	22.6	8.7	A
10		24.7	17.7	
9.5		48.4	49.9	
9.4	14	50.0	48.2	
9.5		54.0	17.0	
8.2		55.7	34.2	A
8.8	15	8.3	29.5	A
9.5		11.3	56.2	
6.5	16	1.8	17.9	A
8.3		29.8	45.4	A
9.7		35.9	55.3	
9.6		37.7	57.6	
9.0		54.4	2.3	
8.5		55.5	29.6	A
9.5	17	2.6	29.5	
8.9		18.0	17.0	A
9.0		42.0	15.3	
9.3	18	0.7	18.7	
7.5		2.5	20.2	A
8.5		3.0	16.7	A
9.2		12.6	3.2	
9.5		13.8	29.4	
9.8		24.5	39.8	
10		46.4	45.2	
9.5	19	11.1	6.6	
9.2		35.4	53.7	
9.5		38.0	47.2	
9.5		40.6	28.2	
9.0		53.8	18.7	
10		59.6	28.9	
9.8	20	9.2	25.7	
9.6		27.5	18.1	
9.5		29.9	52.2	
9.0		36.0	7.1	
9.6		40.8	16.4	
9.3		54.5	1.8	
9.3	21	53.9	50.4	
8.3	22	23.1	21.4	A
9.5		31.3	54.7	
8.8		45.8	27.1	A
10		48.4	45.7	
9.2		50.4	24.5	
9.3		51.6	55.8	A
9.3		55.3	6.0	
8.8	23	27.3	6.2	A
9.5		27.3	32.8	
9.8		36.9	16.3	
9.8		43.0	18.5	
9.1		48.4	55.9	
8.1		56.9	45.5	A
9.3	24	9.5	27.7	
8.9		18.5	42.7	A

4641—4700

m	17h m	s	−21° ′	
9.0	24	28.0	38.6	A
9.2		31.1	59.2	
9.9		32.9	57.1	
8.5		40.0	11.7	A
9.5		51.3	11.3	
9.8	25	10.0	38.0	
9.1		19.6	4.5	B
9.1		39.0	43.7	
9.5		42.3	0.8	
9.5		52.4	27.6	
9.8		58.4	46.5	
9.8	26	4.4	45.7	
9.7		13.9	23.0	
8.8		19.3	6.9	B
9.1		21.0	22.8	
9.5		25.4	45.9	
9.4		33.5	47.0	A
9.3		33.9	47.7	A
6.5		35.2	56.0	A
9.4	27	3.0	12.2	
9.4		7.5	39.2	
9.0		9.1	5.3	B
10		14.2	6.2	
9.8		35.5	22.5	
9.3		39.4	51.7	A
9.4		48.5	12.2	
9.6	28	21.1	42.0	
9.4		34.1	2.1	
9.5		37.6	37.2	
9.0		39.3	26.7	A
9.4		44.0	58.6	
9.5		45.3	5.9	
9.5		55.2	4.5	
8.1	29	2.0	9.9	A
9.2		19.1	25.1	
9.5		26.0	59.5	
8.9		26.8	29.0	A
9.5		39.9	35.6	
9.1		40.7	17.9	
9.3		43.1	25.3	
9.8		53.1	4.5	
6.3	30	2.5	49.4	A
9.1		4.0	20.1	
9.0		7.3	34.3	A
9.5		15.2	3.3	
9.5		20.0	9.8	
9.8		27.4	17.7	
9.0		49.0	23.5	A
9.5		51.3	57.2	
9.5	31	0.2	0.2	
9.8		2.6	32.7	
9.5		5.4	33.2	
9.7		16.7	40.3	
9.6		30.3	1.7	
9.8		30.9	16.3	
9.7		34.0	16.6	
9.4	32	28.5	21.6	
9.0		34.4	11.7	A
9.8		38.0	45.0	
9.4		43.3	28.4	

4626: Nova 1604 soll 26° vorausgehen 0′.8 nördlich; wahrscheinlichster Ort derselben 21ᵐ57ˢ 21′.2

4701—4760				4761—4820				4821—4880				4881—4940				4941—5000			
17h		—21°		17h		—21°		17h—18h		—21°		18h		—21°		18h		—21°	
m	s	′		m	s	′		m	s	′		m	s	′		m	s	′	
12	46.5	51.9	B	10	43	10.4	48.2	9.1	53	28.4	45.0	9.8	1	41.1	16.1	9.8	9	41.9	48.6
13	3.0	23.5		9.4		44.5	40.8	9.5		29.9	32.6	9.4		41.7	17.8	9.2	10	5.7	17.5
	7.4	17.1		9.6		55.0	5.0	8.6		38.1	57.3	A	9.5	2	6.3	56.8	8.9		11.0	30.6	M
	17.0	14.9		9.5		55.7	22.2	10		46.4	46.3		8.5		6.6	20.0	A	9.5		17.0	5.7	
	25.3	51.5		9.5	44	0.4	49.0	9.7		55.1	58.4		8.7		13.4	13.6	A	9.3		17.3	21.2	M
	34.2	38.7	B	9.5		5.4	29.8	8.0		57.5	30.0	WC	9.8		18.9	2.3		9.2		18.5	35.9	WZ
	37.5	13.1		9.0		24.9	22.1	WZ	9.7	54	2.2	59.4	9.5		21.1	28.0		9.4		25.3	22.2	
14	11.5	30.6		9.1		46.9	44.0	WZ	9.5		7.9	58.9	9.3		28.9	14.7	A	9.8		41.9	20.5	
	17.5	7.4		8.5		53.0	6.4	A	9.5		18.7	29.2	9.7		47.8	22.5		9.5	11	3.1	54.7	
	30.9	46.0		9.8	45	8.4	24.0	9.8		28.4	30.3	9.6		54.4	11.6		9.2		9.3	47.1	M
	43.9	21.4		8.7		55.1	24.4	A	9.8		35.7	56.0	9.3	3	5.5	27.7		9.4		10.4	39.7	
	45.0	36.1	A	9.5	46	18.4	41.1		9.2	55	5.7	50.1	9.6		8.1	13.0		9.2		27.2	33.3	WZ
15	6.8	19.8		9.7		30.8	27.7		9.3		11.3	51.5	9.8		26.9	7.4		9.1		30.4	20.5	WZ
	35.3	56.4		9.4		32.4	47.5		9.8		17.1	49.7	9.2		32.6	15.7	A	9.3		35.5	32.4	WZ
	38.4	39.2	A	9.8		41.1	7.9		9.5		20.2	9.4	9.6		38.5	28.3		9.5		56.9	26.4	
	40.0	23.0	WZ	10		46.2	2.3		9.3		42.8	17.0	9.5		40.1	9.4		9.1	12	6.0	1.0	
	52.6	6.0		9.7	47	6.9	26.7		9.5	56	9.8	54.7	9.4		40.2	8.3		9.6		11.4	1.6	
	55.9	30.1		9.3		7.9	22.9		9.8		31.3	29.1	9.6		47.4	29.9		9.7		26.8	59.2	
	58.4	49.7		7.2		38.7	55.4	A	8.5		40.4	40.0	B	9.8		47.8	20.6		9.5		27.6	52.3	
	58.4	57.0	A	9.0		38.7	47.2		9.5		45.3	56.3		8.7		59.3	1.3	A	9.2		33.9	42.7	A
16	1.5	21.0		9.2		43.1	25.0	WZ	9.4		47.4	56.6		10	4	3.9	45.4		9.1		36.7	25.9	WZ
	30.2	38.4	A	9.5		46.0	8.5		8.5		47.8	8.7	A	9.8		26.8	22.4		9.3	13	16.4	46.2	
	53.0	1.4		9.5		46.4	13.4		9.3		49.1	33.0		8.8		31.8	44.7	WZ	9.1		18.5	8.9	A
	58.2	3.5		9.5		56.1	44.2		9.2		49.3	29.8		8.5		37.9	17.3	A	9.4		22.1	26.2	
17	6.9	7.8		9.5		56.2	36.0		9.5	57	4.4	31.5		9.9		55.0	3.9		9.8		27.4	45.7	
	13.6	1.4		9.5	48	21.0	8.3		9.4		21.2	58.9		9.4		56.9	18.6		9.0		48.4	26.4	WZ
	28.6	32.1	A	9.5		31.9	10.4		9.5		23.1	20.1		9.5	5	3.5	4.8	WC	9.5		48.8	3.3	
	32.1	25.7		9.8		38.6	34.2		8.8		29.0	27.9	WC	4.0		6.1	5.2	A	9.3		57.5	9.0	WZ
	32.7	17.7		9.5		47.4	31.0		10		39.5	40.3		9.0		9.0	5.6	WC	8.5	14	3.4	38.7	
	44.5	12.1	A	9.6		57.2	56.1		10		46.5	40.3		9.0		12.3	51.1	A	9.8		9.3	48.5	
	58.9	26.9	A	9.3		57.3	41.9		9.4		55.4	7.2		9.8		14.9	11.2		10		30.9	43.2	
18	0.7	16.5		9.5	49	10.7	40.3		8.8	58	6.5	3.9		9.8		15.5	25.8		9.6		49.3	51.2	
	2.0	4.8	A	9.1		30.0	58.8	WZ	8.2		9.3	30.9	B	9.8		30.8	31.1		9.5		50.8	38.1	
	10.0	34.8		9.4		44.7	14.8		9.8		27.4	9.2		9.7		31.4	40.0		8.3		52.7	43.8	A
	29.2	31.4		9.5		47.4	50.0		6.4		29.1	26.7	B	9.8		33.1	20.6		9.4		56.3	36.8	
	29.4	35.0		9.1	50	2.6	45.5		9.2		32.6	15.3		6.3		33.9	44.8	A	9.0	15	3.6	59.2	M
	46.0	8.1	WZ	9.7		13.4	7.5		9.3		37.8	59.6		9.1		57.6	45.8	A	9.5		9.1	21.9	
	48.3	1.3		9.5		17.6	7.6		8.2		40.1	12.5	A	9.3		57.6	49.5		9.5		25.1	53.1	M
19	18.9	23.1		9.4		19.6	12.2		9.3		49.9	40.5		9.1		58.4	52.5		9.4		34.4	12.5	WZ
	24.0	16.2		9.5		20.7	42.0		9.8		53.4	14.6		9.2	6	1.2	40.1		9.2		49.1	58.5	
	29.5	39.7	A	9.7		23.5	22.0		8.7		58.9	52.2	P	9.5		19.3	22.9		9.2		52.6	55.1	A
	33.4	20.1		9.3		29.9	47.4		9.5	59	14.0	19.8		9.8		25.1	38.9		9.6		57.8	52.0	
	58.3	16.8		10		37.0	25.1		9.8		41.8	23.8		9.8		44.3	33.0		9.8	16	9.6	33.1	
0	9.4	3.1		9.7		40.2	8.5		7.8		47.9	15.7	A	9.5		49.6	56.3		9.6		13.5	40.0	
	13.4	27.7		9.4		47.8	16.0		9.1		50.4	39.0		9.5	7	15.5	34.1		9.5		15.9	11.6	
	29.3	54.9		8.0		52.0	1.9	A	6.8		56.0	27.8	B	9.8		28.6	53.0		10		22.6	33.4	
1	2.7	23.3		9.8		58.7	54.3		9.5	0	4.4	15.6		9.8		31.4	47.2		9.4		30.7	28.4	
	6.3	7.6		9.6	51	0.4	31.4		9.4		10.9	17.3		9.7		32.3	57.5		10		32.5	38.3	
	12.1	29.7		9.8		12.9	10.2		8.7		13.8	25.0	WC	10		41.2	0.1		9.1		37.9	48.6	A
	42.9	11.5		9.0		24.8	43.1	WZ	9.6		19.3	45.0		9.5		48.3	48.1		9.5		54.2	44.0	
	55.8	52.6	A	10		29.5	9.2		9.0		23.0	25.3	WZ	9.7		48.5	26.2		9.5		55.9	52.1	
2	3.9	44.1	A	9.1		30.7	8.0		9.5		24.1	54.0		9.8	8	1.8	59.3		8.5		59.4	6.2	A
	6.2	36.3		9.0		41.0	27.1	WZ	8.9		41.8	31.6		9.3		14.3	56.4		9.4	17	3.1	57.3	A
	9.4	25.7		9.5		54.4	25.0		9.7		45.9	18.4		9.3		24.0	58.2		9.9		7.4	47.8	
	20.8	13.2		10		57.5	39.8		9.0		47.0	35.4	WZ	9.8		55.1	7.1		9.1		16.5	36.4	
	26.1	21.7		9.5	52	20.9	16.6		9.5		51.5	34.3		9.7		56.9	11.2		9.5		29.0	9.3	
	36.2	20.8		9.8		49.9	8.1		9.3	1	13.8	58.3		9.5	9	19.3	52.6		9.4		35.4	32.9	
	55.7	7.5		9.4	53	3.4	7.7		9.5		27.4	4.2		9.5		29.5	18.1		9.5		39.7	16.0	
	57.0	21.6		9.5		6.3	32.3		9.0		33.3	20.5	A	9.9		38.4	46.0		9.8		40.0	7.3	
3	9.5	0.9	A	9.8		11.5	7.5		9.8		39.4	40.3		9.6		39.2	37.3		9.5		45.1	23.2	

5001—5060

m	18h m	s	—21° ′	
9.5	17	49.6	27.2	
9.2		55.4	51.9	A
9.5		56.7	20.3	
9.2	18	9.0	36.0	A
9.0		37.9	45.0	
9.5		59.6	48.7	
9.5		59.7	44.6	
9.5	19	4.4	24.4	
9.8		13.4	27.1	
8.5		18.2	40.2	A
9.7		25.7	34.5	
9.0		26.6	26.1	A
8.7		28.9	19.0	A
9.5		46.2	6.4	
8.8		46.6	24.9	A
9.3		51.4	10.0	
9.2	20	5.0	43.5	A
9.3		8.7	5.0	
8.5		10.8	27.1	A
9.2		18.2	36.2	
9.7		38.2	55.5	
8.5		45.7	43.3	B
9.6		47.4	13.8	
9.6	21	4.2	49.2	
7.5		11.8	2.4	A
9.6		38.3	17.0	
8.0		52.3	50.6	A
9.5	22	5.6	29.0	
8.7		18.0	36.9	A
9.3		34.0	52.4	
9.5		43.5	34.5	
8.5		48.2	20.8	M
10		55.1	49.6	
9.5	23	3.2	35.0	
9.8		6.4	49.8	
9.2		10.8	51.1	A
9.3		35.1	48.9	A
9.5		40.7	7.4	
9.5		44.1	32.7	
9.5		54.9	49.1	
9.0		56.3	20.4	WZ
9.9	24	22.1	7.0	
9.8		28.6	58.7	
10		32.6	56.8	
10		33.6	6.5	
9.9		39.2	24.0	
9.5		43.0	8.0	
8.8		55.1	20.3	WZ
9.4	25	20.2	24.7	
9.5		26.7	32.7	
9.8		32.5	7.8	
9.0		38.4	39.3	WZ
10		50.6	55.6	
9.7		51.2	33.3	
9.4		54.8	11.2	
9.1	26	28.6	47.0	
9.1		30.9	28.1	
9.5		31.8	53.2	
9.8		45.4	5.5	
9.0		47.7	20.3	

5061—5120

m	18h m	s	—21° ′	
9.4	27	4.3	8.5	
9.4		24.5	33.4	
9.4		40.0	28.9	
9.3		44.6	48.2	
9.5		51.6	48.8	
9.4		54.7	41.5	
9.2	28	7.8	7.0	
9.2		18.9	9.4	WZ
9.0		19.5	45.8	WC
8.5		46.8	36.5	B
8.3		49.2	49.2	A
9.5		50.3	23.0	
9.7		56.7	25.6	
8.8		58.7	31.7	WZ
8.8	29	11.1	52.4	A
6.3		14.0	30.8	L
9.5		32.2	47.0	
9.1		43.0	33.5	
8.9		46.8	17.6	WZ
9.4		54.3	56.9	
6.0	30	14.9	9.9	L
9.3		15.7	16.1	
10		18.5	54.4	
9.4		20.8	9.6	
9.0		28.9	58.5	A
9.5		30.5	24.6	
9.4		36.0	53.3	
8.8		49.3	8.6	
8.9		59.4	1.9	WZ
8.2	31	24.0	5.4	A
10		25.0	20.7	
9.2		27.7	20.6	
9.5		28.6	28.1	
9.5		48.9	34.9	
9.8		50.1	14.6	
8.5		58.3	36.8	B
8.5	32	1.2	47.1	A
9.2		5.1	15.2	
9.4		6.4	17.5	
9.5		10.6	10.8	
9.9		39.3	26.8	
9.6		45.4	27.5	
9.5	33	7.8	3.1	
8.3		18.7	27.1	A
10		28.2	33.4	
9.6		43.4	10.9	
9.5		50.3	12.6	
8.8		53.8	17.5	
9.1	34	4.3	12.0	
9.6		16.2	25.9	
9.6		22.1	25.9	
9.5		22.6	52.8	
9.4		22.8	9.2	
9.3		30.8	11.8	
9.8		33.4	35.6	
9.9		37.3	21.9	
8.8		42.4	27.5	WZ
7.5		53.9	3.3	A
10	35	13.6	38.9	
9.2		14.3	13.1	

5121—5180

m	18h m	s	—21° ′	
9.5	35	18.9	50.4	
9.7		36.3	33.3	
9.7		39.3	58.4	
10		40.5	46.6	
10		41.4	23.3	
9.5		41.7	4.9	
8.2		58.9	6.5	A
9.1	36	15.9	30.5	WC
9.0		21.8	40.2	A
9.0		22.2	53.7	A
6.8		38.9	8.4	A
9.3	37	7.9	9.3	
9.1		23.8	20.0	A
9.7	38	2.5	52.5	
9.5		14.1	40.2	
9.9		15.4	43.0	
9.2		42.4	17.3	A
8.8	39	18.4	7.1	A
9.4		24.1	26.4	
9.5		45.0	51.6	
9.1		48.8	30.1	
9.4		56.4	17.8	
10		56.7	1.9	
9.4		58.1	44.3	
9.7	40	4.5	21.4	
9.8		11.2	35.7	
10		12.8	58.0	
9.8		31.7	52.3	
9.5		39.9	26.8	
9.8		50.8	3.3	
9.5		58.0	3.0	
9.5	41	1.0	59.7	
9.5		11.5	58.7	
9.5		39.8	8.6	
9.9		40.9	20.2	
9.5		52.6	11.9	
9.8	42	9.0	20.8	
9.4		42.9	17.9	
9.3		45.8	52.7	
9.2		51.0	37.0	
9.0		58.0	4.1	WZ
9.1	43	3.3	50.8	
9.0		11.0	41.5	
8.8		11.1	1.7	WZ
9.4		15.2	52.2	
9.0		41.3	3.5	
9.4		44.0	6.4	
9.3		50.7	35.6	
9.4	44	7.5	35.4	
8.5		38.8	54.0	A
9.1		43.5	29.7	WZ
10		50.4	59.2	
8.3		59.4	13.3	WZ
9.9	45	5.0	39.5	
9.4		17.7	38.9	
6.2		20.2	31.8	P
8.5		30.0	5.8	WZ
9.1		45.0	28.7	
9.5		47.5	40.3	
9.5		48.3	32.1	

5181—5240

m	18h m	s	—21° ′	
9.5	46	5.1	14.3	
9.5		12.8	33.4	
8.8		40.0	1.2	A
8.8		46.4	5.1	
9.4	47	1.5	39.7	
9.4		1.9	3.7	A
9.6		2.5	38.4	
9.5		18.0	12.0	
10		27.3	38.0	
9.5		31.4	57.0	
9.2		37.4	39.5	
9.7		45.3	59.9	
9.3		48.5	9.2	
9.7		55.0	3.3	
9.4	48	3.4	19.9	
9.4		27.3	29.9	
9.4		27.5	27.7	
9.5		40.9	11.2	
9.5		54.0	57.3	
8.5		58.0	20.1	A
4.0	49	4.3	16.8	A
8.5		6.4	55.2	WZ
9.4		17.9	56.1	
9.1		32.8	46.1	A
9.5	50	0.9	27.3	
9.5		22.2	15.9	
8.3		35.1	25.2	A
9.3		42.3	31.7	
9.2		45.1	33.9	
9.3	51	10.8	56.3	A
10		26.0	5.1	
9.7		27.0	12.4	
9.5		29.4	1.9	
9.4		38.1	56.7	A
9.8	52	2.5	36.1	
9.1		8.2	45.5	
9.8		11.1	29.6	
9.8		13.4	38.8	
9.5		26.2	9.7	
9.8		59.7	52.8	
8.8	53	8.7	8.2	WZ
9.4		10.0	58.9	
9.3		31.1	51.3	
9.5		39.4	28.4	
9.5		55.1	25.1	
9.5		55.2	21.8	
9.5	54	32.2	18.0	
9.5		35.7	44.9	
9.0		50.8	12.6	WZ
9.5	55	26.5	47.5	
8.7		32.4	0.5	A
9.5		38.4	1.9	
7.0		39.7	44.2	B
9.5		51.8	22.7	
9.0		52.8	40.7	
9.7		56.8	53.4	
4.2		59.0	57.0	A
8.8	56	1.3	13.8	A
9.1		12.8	12.7	
9.4		14.2	0.2	

5241—5300

m	18h—19h m	s	—21° ′	
9.4	56	16.0	23.0	
7.8		27.3	9.4	A
8.7		33.8	17.6	A
9.5		48.3	22.2	
9.5		57.2	14.8	
8.5	57	8.3	7.5	A
9.8		14.3	1.9	
9.4		26.2	23.9	
9.8		28.6	15.5	
10		32.1	9.2	
9.1		50.4	54.9	
9.5	58	2.8	23.5	
9.3		5.6	30.0	
9.5		20.8	10.5	
8.5		21.3	38.6	A
9.1		35.4	32.1	
8.5		44.7	50.1	A
9.3		52.8	40.8	
9.5	59	1.7	18.1	
8.2		7.7	27.8	A
8.5		20.6	54.7	A
9.0		20.9	2.5	
9.5		22.2	17.4	
9.5		29.1	27.6	
9.8		53.7	1.7	
7.8		56.9	12.8	A
8.7		59.8	27.9	A
9.0	0	14.4	7.2	
9.5		22.8	42.4	
9.5		36.7	7.4	
9.1		43.3	22.7	
9.5		44.2	13.9	
8.5	1	1.1	41.5	A
9.2		4.9	38.9	B
3		9.1	14.6	A
8.7		45.3	32.5	B
9.5		53.2	16.4	
8.7		54.4	54.3	A
9.2		57.4	36.4	A
9.5	2	8.7	27.4	
9.1		14.8	26.5	A
9.5		28.3	6.1	
9.4		38.1	55.0	
9.4		39.4	2.0	
9.5		42.0	13.5	
8.9		43.2	20.4	WZ
9.5		47.1	29.8	
10		56.8	48.5	
10	3	5.7	57.1	
8.0		23.4	19.2	A
9.6		39.2	24.8	
7.0		47.9	53.6	R
9.8		49.8	14.3	
9.5		59.4	58.0	
9.9		59.5	34.3	
9.5	4	10.3	5.4	
9.3		25.9	28.1	
9.4		26.4	17.9	
9.3		34.5	21.7	
9.6		55.7	30.5	

5301—5360					5361—5420					5421—5480					5481—5540					5541—5600				
	19h		−21°			19h		−21°			19h		−21°			19h		−21°			19h		−21°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
8.8	5	21.6	26.8	WZ	9.5	13	35.1	27.6		8.8	22	56.9	10.8		9.5	32	34.4	56.1		9.6	41	38.2	5.1	
10		44.3	23.6		9.5		36.0	46.7		9.3	23	5.5	22.9		8.5	33	9.1	53.4	A	8.5		45.5	59.9	A
9.1		59.4	28.8	A	9.6		42.0	53.1		9.8		16.0	33.1		9.8		10.0	49.4		9.8	42	5.3	2.0	
9.4	6	4.2	52.7		9.6		50.9	51.2		9.9		18.7	3.5		8.7		15.8	10.3	B	9.5		12.1	47.0	
9.1		13.8	27.7	A	9.5	14	1.7	17.7		7.3		38.2	49.0	A	9.5		17.8	10.7		9.3		35.8	34.6	
9.4		28.2	59.0		9.5		9.5	2.5		9.5		43.0	53.1		9.1		20.3	11.8		8.5		48.0	30.5	B
9.2		46.9	15.7	WZ	9.1		23.5	3.8	A	9.4		59.1	59.9		9.4		30.9	1.8		10	43	3.0	0.6	
9.4	7	4.3	18.1		9.5		34.5	49.6		9.5	24	14.7	8.2		9.3		35.3	58.5		9.7		21.9	37.5	
9.5		10.8	49.5		9.2		34.8	31.1	A	9.5		23.9	52.1		9.0		40.1	30.0	M	9.7		23.4	27.0	
9.5		13.4	33.0	.	9.5		41.6	35.3		10		26.6	59.2		10		52.5	48.4		9.8		37.3	1.6	
9.5		19.7	54.5		9.8	15	2.8	34.3		9.8		42.0	27.2		9.5	34	1.4	4.5		9.8		40.0	15.7	
8.6		26.9	12.0	A	9.5		9.1	30.2		9.8		52.0	25.2		9.5		16.0	45.0		9.8		41.1	6.1	
9.5		34.0	45.0		9.5		28.4	19.4		10	25	16.4	34.7		9.5		21.1	33.3		9.4	44	0.2	1.3	
9.5		39.4	33.0		9.5		31.4	23.0		9.4		18.2	18.3		8.3		22.8	49.1	B	8.8		4.6	42.6	A
8.8		41.6	11.5	A	9.4		37.9	34.5		9.0		25.3	14.5	M	9.3		27.3	42.1		9.2		6.4	25.0	
9.5		47.1	32.3		9.8		45.5	5.7		9.5		26.5	38.6		9.2		35.5	0.7	WZ	8.2		19.1	26.0	A
9.5		49.8	2.5		9.5		51.5	30.5		9.0		28.1	50.9	WZ	9.9		51.2	24.2		9.2		22.3	4.1	
9.4		52.0	36.1		9.5		52.4	40.7		9.3		43.7	15.9		9.0	35	11.5	30.4	WZ	9.5		24.7	32.8	
9.1		57.8	10.7	A	9.5	16	5.6	8.2		9.8	26	7.8	48.5		9.4		28.6	18.4		9.8		27.5	28.8	
9.5		58.1	32.8		9.5		15.7	25.4		9.5		14.8	5.9		8.3		54.9	7.9	A	9.0		34.1	47.9	
9.1	8	10.5	1.6		9.4		35.3	35.5		9.5		17.0	40.4		9.4	36	2.3	26.2		9.2	45	5.4	20.2	M
9.3		10.6	42.3		10		51.2	33.0		9.4		18.1	34.4		10		7.9	53.9		9.5		5.9	38.7	
9.5		14.9	7.5		9.5	17	12.0	13.4		10		21.7	16.3		9.0		15.8	9.9		10		26.9	24.4	
9.3		17.8	44.5		9.3		20.7	7.5		6.8	27	0.3	5.1	A	9.8	37	3.9	45.4		9.1		34.8	43.8	A
8.6		18.9	45.0	B	9.6		24.4	53.6		9.1		9.4	25.6		9.7		4.9	29.5		9.6		47.5	59.1	
8.0		38.3	19.4	A	8.2		29.2	49.4	B	9.1		12.2	42.0		9.5		18.9	2.8		9.8		58.2	49.2	
9.5		38.5	40.2		9.5		45.9	21.6		8.8		16.5	14.1	A	9.0		30.4	17.5	M	9.5		59.0	5.1	
9.7		50.3	42.4		7.5		51.3	31.7	B	9.2		32.3	33.3		9.5		36.8	5.0		9.5	46	3.7	28.1	
10		52.6	54.7		9.1	18	5.2	58.5		9.5		49.7	58.5		9.5		45.7	49.5		9.4		16.0	34.0	
9.0	9	0.8	52.0	M	8.3		28.4	54.5	A	9.0	28	21.2	48.7		7.3		55.3	52.4	A	9.6		31.9	59.4	
9.1		11.8	25.4	A	9.5		31.3	11.1		8.3		27.3	57.1	WZ	10		58.9	3.6		9.5		33.0	17.9	
8.3		17.1	45.6	A	9.4		55.2	27.0		9.4		33.6	51.4		9.3	38	4.3	55.8		9.5		45.0	0.0	
9.4		17.3	23.6		9.5	19	1.4	32.0		10		34.6	5.5		8.5		5.1	15.7	M	9.3		49.1	51.6	
9.5		28.5	38.8		9.0		8.5	0.9	A	9.3		36.5	37.4		9.3		15.3	16.4		8.2		58.6	53.0	A
9.4	10	4.7	44.2		9.3		17.5	52.9		9.5		48.7	13.2		9.3		15.3	32.2		9.8	47	11.5	20.5	
9.1		9.8	40.2		9.2		22.6	26.1	A	9.5		59.2	13.6		9.5		15.9	13.4		10		14.7	42.0	
9.0		15.3	57.5	M	10		30.4	29.9		9.5	29	0.0	10.0		9.1		49.5	59.7	M	9.4		31.2	13.8	
9.9		21.4	13.2		9.5		42.6	25.9		9.4		5.3	13.9		9.3		57.6	45.0		9.3		53.6	16.7	
9.8		37.9	47.5		9.2		58.6	17.0	WZ	9.0		11.8	7.7	A	9.8	39	9.4	49.8		10	48	7.9	29.3	
8.3		41.0	8.9	A	9.9	20	5.7	6.0		9.8		32.3	32.3		9.9		22.7	32.7		9.4		14.5	39.2	
9.5		47.4	16.1		9.8		7.6	19.3		9.7		35.1	19.8		9.4		25.0	41.9		10		53.9	31.6	
8.5		55.1	26.3	A	9.5		14.9	11.8		9.3		36.7	39.4		6.8		27.3	18.8	A	9.5	49	17.0	53.4	
9.5	11	14.4	34.5		9.5		44.2	32.5		10	30	3.6	29.4		8.8		31.3	29.4		9.1		49.5	7.5	
9.5		15.8	24.8	WZ	9.1		46.7	47.1		9.8		6.7	22.8		9.5		37.4	49.2		9.4		52.9	22.5	
9.5		25.9	45.1		8.2	21	6.4	38.0	A	9.5		7.0	33.4		9.5		39.2	41.0		9.2	50	13.6	39.1	
9.4		37.8	54.4		9.5		17.4	58.1		9.5		28.8	29.1		9.4		40.2	57.7		9.8		37.4	32.9	
8.8		51.2	31.4	A	9.4		40.1	56.7		9.7		46.4	2.6		8.6		45.6	2.4	A	9.7	51	36.0	19.9	
9.4	12	0.5	13.9		8.0		45.2	7.9	A	9.4		54.1	53.7		9.4	40	3.3	30.9		8.0		52.1	15.0	B
9.5		4.6	2.5		9.8		50.6	12.5		10		59.8	38.5		9.6		7.4	37.0		9.3		55.0	8.9	
9.4		11.8	56.4		6.5	22	16.8	36.1	A	9.1	31	3.1	28.8		9.6		11.9	50.2		10	52	18.0	44.0	
8.3		15.2	48.2	A	9.5		19.5	19.8		8.7		6.9	55.9	WZ	9.8		23.8	22.5		9.8		19.9	40.9	
10		23.0	13.7		8.0		23.7	44.0	B	8.8		17.1	39.6		9.4		33.9	56.7		9.5		23.4	48.3	
9.8		36.5	27.1		9.8		25.4	30.0		8.3		18.5	19.8	A	9.1		44.1	5.1	WZ	9.4		31.1	6.4	
9.6		37.0	30.9		8.8		26.5	35.8	A	9.3		27.1	57.2		9.5		49.0	31.0		9.8		33.1	1.7	
9.4		39.8	50.1		9.5		34.1	16.0		9.8		41.7	21.5		9.5		57.9	17.5		8.2		36.4	51.3	A
9.9		46.8	35.3		8.3		41.8	55.8	A	8.0		42.2	37.8	B	9.1	41	1.4	21.0		9.7		36.5	34.0	
9.6		48.0	26.5		9.4		42.1	30.4		8.3		59.0	34.8	WZ	10		5.1	53.1		9.0		39.3	56.8	A
9.8		53.6	42.9		9.8		45.8	4.2		10	32	11.8	16.8		9.1		8.2	43.7		9.8	53	4.1	54.9	
8.5	13	14.0	54.7	A	7.8		50.3	20.2	B	8.0		15.4	10.0	B	8.6		12.3	6.2	M	9.5		37.6	41.8	
9.8		24.6	5.2		8.3		52.2	56.2	A	9.6		27.9	54.7		9.0		34.3	53.3	M	8.2		42.4	28.9	A

5444: 1:00 5′20″1 B_4, Ep. 1871.60

5601 – 5660

	19h—20h		−21°	
m	m	s	′	
9.8	54	16.1	13.0	
9.8		23.2	3.5	
7.8		27.1	8.2	A
9.5		46.5	47.4	
9.8	56	1.1	56.7	
9.3		18.1	56.7	
9.5		25.7	46.2	
8.9		26.1	29.4	
7.0		26.9	43.3	A
9.5		29.1	2.7	
10		42.0	13.0	
9.5	57	8.2	12.5	
9.8		32.2	18.1	
8.0		35.6	24.8	A
9.8		38.5	45.6	
9.5		42.2	36.7	
8.9	58	4.6	19.0	A
9.4		18.8	5.0	
9.0		54.9	51.0	A
9.5	59	6.2	39.8	
8.0		8.4	14.9	A
10		25.8	3.1	
9.4		46.8	41.4	
9.5	0	4.7	15.5	
8.9		9.2	24.3	A
9.5		38.4	43.6	
9.1		38.5	50.7	
9.5		53.6	15.4	
7.2	1	4.4	0.2	L
9.4		5.0	52.6	
8.5		23.2	56.6	A
9.5		36.6	40.1	
9.5		40.6	41.7	
9.7		46.3	37.7	
8.8	2	4.1	44.5	WZ
9.1		8.6	19.9	
8.5		22.3	43.5	WZ
9.2		23.0	16.1	
8.8		24.0	26.7	WZ
9.4		37.3	23.0	
9.4		51.1	32.5	
9.3		56.5	8.4	
9.4	3	29.4	47.9	
9.0		31.9	43.4	A
9.4		49.6	9.4	
9.3	4	6.5	40.7	
8.0		44.8	52.5	B
9.5		50.3	54.8	
9.0		59.7	45.6	A
9.8	5	23.0	52.8	
9.9		26.6	30.3	
9.1		32.2	43.8	
10		37.9	59.2	
8.7		59.8	59.7	WZ
8.6	6	13.1	37.2	A
9.0		23.7	13.9	M
9.5		25.4	31.5	
9.3		46.6	22.2	
9.5		49.5	46.4	
8.4	7	0.7	54.0	M

5661 – 5720

	20h		−21°	
m	m	s	′	
9.5	7	7.5	48.1	
10		9.5	33.3	
9.8		24.2	6.2	
9.3		26.6	41.0	
9.7		28.7	50.2	
10		33.5	48.6	
9.8		34.4	59.9	
9.1		52.5	46.1	
8.3	8	18.7	22.0	A
10		29.5	50.0	
9.6		30.7	19.6	
7.7		36.9	45.6	A
9.2		42.3	44.4	
9.0		43.4	38.7	
9.6	9	15.0	33.0	
9.7		20.0	59.2	
9.1	10	2.8	46.8	
9.3		3.0	28.1	
9.4		24.6	23.2	
9.8		38.8	45.0	
8.5		51.0	36.8	WZ
9.4		52.3	13.2	
9.8		55.3	55.8	
7.0		57.5	23.6	WZ
9.0	11	10.5	21.1	WZ
9.4		23.8	16.2	
9.4		26.7	38.6	
9.5		38.8	18.2	
9.3	12	3.6	53.2	
8.7		17.8	15.0	A
9.4		46.0	29.5	
10		59.1	54.0	
9.5	13	4.3	11.4	
7.6		4.4	51.9	A
10		7.9	49.4	
9.3		59.8	25.1	
9.6	14	0.8	29.4	
9.6		32.5	55.9	
9.0		35.9	18.4	WC
9.1		38.9	7.5	
9.4		50.9	52.3	
10		58.4	6.4	
8.2	15	2.4	47.9	A
9.7		8.7	38.4	
10		31.5	6.8	
7.8		38.3	38.0	B
8.2		54.4	22.4	M
9.1	16	5.8	39.4	
10		17.7	59.9	
9.6		23.5	59.8	
9.4		34.0	23.6	
9.7		34.9	15.3	
9.8		35.6	6.8	
10		44.8	27.8	
9.4		58.4	16.0	
8.5	17	0.4	37.4	A
8.7		1.9	57.1	
9.1	18	21.4	37.9	
8.5		24.5	16.8	A
9.4		47.0	17.7	

5721 – 5780

	20h		−21°	
m	m	s	′	
9.5	19	18.0	34.6	
9.6		31.4	33.6	
8.8	20	4.1	2.9	A
8.9		6.0	36.3	WZ
10		9.1	28.3	
9.3		16.0	57.2	
9.4		27.9	41.1	
9.4		28.9	54.1	
6.5		33.6	22.4	B
10		40.9	46.3	
9.5		43.3	44.4	
9.5		45.6	7.2	
10		58.2	28.4	
9.4	21	3.5	13.5	
8.7		10.4	35.9	A
9.1		23.8	40.4	
9.0		35.4	43.8	A
7.0	22	15.2	11.4	B
10		16.3	1.6	
9.5		22.6	19.8	
9.4		27.7	41.3	
9.5		47.2	13.3	
9.2	23	35.3	34.7	
9.4		36.5	31.4	
9.8	24	7.0	56.5	
10		9.0	12.3	
9.8		24.2	39.8	
9.8		27.1	24.9	
9.9		27.4	59.5	
10		34.0	46.2	
8.8		59.7	54.6	
8.3	25	0.7	23.0	WC
9.0		8.8	44.5	WC
8.0		29.8	1.6	A
9.8		34.6	51.7	
9.7		55.3	43.7	
9.5	26	7.9	34.5	
9.1		15.9	55.7	
9.8		28.1	3.1	
9.6		30.3	39.2	
9.2		59.8	6.7	A
10	27	8.4	21.4	
9.5		14.5	45.3	
10		15.6	54.5	
10		49.1	43.8	
9.6		52.4	32.5	
8.8		56.3	28.5	A
6.8	28	2.4	4.5	A
9.4		6.8	29.7	
9.5		27.3	48.9	
9.7		33.9	25.5	
9.7		34.4	4.7	
8.7		36.4	3.6	A
9.7		45.1	59.5	
9.7		53.0	36.6	
8.4	29	9.7	49.7	A
9.8		25.1	8.7	
10		27.2	12.0	
10		38.6	55.4	
9.8		48.5	16.5	

5781 – 5840

	20h		−21°	
m	m	s	′	
8.2	29	55.2	55.4	A
6.8		59.9	29.8	A
9.5	30	6.8	53.2	
9.0		32.5	35.9	A
9.8	31	4.4	28.7	
9.4		6.2	32.8	
8.4		12.9	26.4	A
10		19.3	48.4	
9.1		47.0	28.2	A
10		48.2	33.3	
9.1	32	2.3	43.5	A
9.1		2.5	18.2	
10		11.6	24.6	
9.8		24.6	18.4	
9.0		52.0	34.7	A
10		55.3	55.3	
9.0	33	7.5	19.1	A
9.8		14.0	34.1	
9.5		20.4	24.2	
9.7		23.0	32.1	
9.5		39.2	33.1	
8.8		41.5	47.4	A
9.5		49.5	44.6	
9.6	34	1.4	13.5	
8.8		49.1	19.4	M
8.8	35	9.2	37.1	
9.0		22.6	2.0	
8.8		23.8	45.2	WZ
9.3		25.5	48.1	
9.5		27.6	12.5	
9.5		35.7	51.7	
8.3		47.1	42.5	WZ
9.0	36	20.1	6.4	
7.7		27.2	24.6	M
9.7		45.5	26.5	
8.7		51.7	40.3	A
9.2	37	21.3	22.3	A
9.1		24.6	30.1	
9.5		27.6	3.3	
8.9		36.1	2.4	
9.0		58.1	4.0	A
10	38	18.8	46.5	
10		19.0	51.7	
9.3		23.2	16.3	
10		47.7	8.9	
10	39	7.1	58.1	
9.8		18.6	24.2	
9.8		20.8	28.5	
9.1		41.5	48.4	
9.5		42.2	34.5	
9.3		42.7	23.0	
8.9		57.0	52.8	
10		57.8	7.9	
10		59.0	12.4	
9.8	40	2.5	25.0	
9.7		10.6	30.3	
8.7		13.4	18.4	M
10		22.4	2.1	
8.5		33.6	8.7	A
8.0		51.4	9.0	A

5841 – 5900

	20h		−21°	
m	m	s	′	
9.2	40	52.3	25.8	
9.5	41	18.8	43.8	
9.1		25.7	8.3	
6.8	42	31.4	50.4	
9.5		35.1	32.3	
9.7		45.8	54.7	
8.7	43	7.0	33.9	
9.3		11.4	40.3	
9.6		15.1	54.1	
9.3		21.2	23.7	
9.4		34.3	5.1	
7.3		59.4	45.8	
9.8	44	5.7	13.5	
9.5		11.0	51.3	
10		14.8	58.0	
9.3		42.9	49.3	
9.3		47.8	14.3	
9.8	45	6.4	25.3	
9.5		17.7	43.3	
9.5		50.7	26.1	
10		52.7	48.0	
9.9	46	1.2	51.5	
10		17.7	49.7	
7.5		22.8	29.7	
9.0	47	2.6	40.0	
10		2.8	31.8	
9.5		7.7	20.7	
9.4		9.8	1.1	
9.7		34.0	55.7	
10		44.8	42.9	
9.0	48	8.9	8.1	
10		37.8	48.3	
9.5		47.0	24.4	
9.8		53.6	42.4	
9.6	49	30.7	36.1	
9.1		31.3	46.7	
9.3		40.9	17.1	
8.5		52.7	53.6	
9.8		58.2	18.6	
9.3		58.3	47.2	
9.8		58.7	5.8	
9.1	50	23.2	36.2	
10		27.5	38.8	
9.8		37.7	31.1	
9.5		39.1	49.4	
9.7		41.0	38.4	
9.9	51	2.0	57.2	
8.9		25.9	2.0	
10		47.9	24.8	
9.8		53.0	46.3	
9.2		56.8	42.8	
9.2	52	10.1	9.5	
9.7		14.4	36.9	
9.6		30.2	56.9	
9.8		33.0	6.7	
9.8		36.9	1.3	
9.8		42.6	11.6	
9.8		53.5	21.0	
9.5	53	0.6	49.1	
9.0		45.6	41.0	

5672: roth

5719: 24.75 16′44.76 B_1, Ep. 1883.65

5901—5960				5961—6020				6021—6080				6081—6140				6141—6200			
	20h—21h	—21°			21h	—21°			21h	—21°			21h	—21°			21h—22h	—21°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
8.8	53 47.6	53.7	A	9.4	4 31.4	25.8		9.4	19 21.0	32.1		9.2	36 15.8	33.8		9.6	51 45.7	1.2	
9.2	50.9	58.8	A	9.5	45.1	30.3		9.7	39.9	53.9		9.9	18.5	8.6		9.6	52 15.3	53.5	
9.3	54 13.6	20.1		9.1	46.5	52.9	A	10	49.2	46.2		9.2	20.1	33.6	A	9.8	15.4	26.9	
9.8	55 17.4	13.8		9.3	47.9	46.2		9.8	20 0.5	30.5		8.9	35.3	55.9		10	17.6	3.3	
9.6	17.7	50.5		9.6	49.8	40.8		9.4	21 2.3	54.5		9.1	37 3.2	53.5		8.9	26.6	30.8	B
9.3	27.4	25.0		9.4	59.0	17.7	R	9.5	3.7	29.6		9.9	14.3	8.7		9.6	30.1	31.4	
8.3	34.9	19.0	WZ	9.7	5 24.8	57.0		9.5	6.4	33.1		9.8	27.2	56.8		9.1	51.2	2.1	A
9.9	52.6	43.0		9.8	55.5	2.7		9.9	38.9	13.9		9.4	46.1	35.3		9.4	53 1.8	38.3	
9.9	59.5	52.7		9.3	6 4.0	40.8		9.5	22 8.4	23.5		9.7	38 12.1	24.0		9.8	32.3	31.7	
9.4	56 31.6	49.0		9.6	13.5	9.6		9.1	16.3	18.4		9.7	32.4	56.8		9.5	34.8	25.2	WC
9.2	36.1	2.7		9.6	14.0	34.4		9.1	23 7.0	41.9		9.0	39 1.2	11.6	M	10	41.4	47.0	
9.6	41.7	26.1		7.5	42.5	22.6	R	9.0	22.5	12.6	WZ	10	21.0	51.5		9.7	49.3	48.2	
8.5	54.2	45.3	A	8.2	57.2	53.4	B	9.3	24 5.0	0.5		9.0	23.9	25.8	A	9.6	55 5.0	44.8	
9.7	57.8	53.2		5.5	7 22.8	14.7	A	9.4	10.4	14.6		9.5	35.3	51.4		8.0	56 23.4	6.5	A
9.2	57 7.1	5.6		9.5	8 17.9	39.0		8.4	13.9	35.4	A	9.3	40 49.7	45.4		9.5	30.9	12.6	
9.4	19.6	48.3		9.7	18.6	13.4		8.9	25.0	1.4	A	9.8	41 30.4	9.0		9.6	36.4	40.2	
8.5	25.3	31.6	A	9.7	36.9	57.1		9.5	42.7	55.0		9.1	32.7	11.0	M	9.5	41.0	47.1	
10	36.5	3.1		8.5	9 23.2	51.4	A	8.5	25 0.5	19.0	B	8.7	45.6	8.4	B	9.1	44.9	23.2	A
10	40.7	7.4		10	32.5	41.3		8.4	12.9	54.7	A	9.4	49.0	26.7		9.6	45.5	27.4	
9.2	43.0	35.8	A	9.8	35.0	4.4		9.5	31.6	40.4		8.7	42 11.7	57.3	A	9.3	52.0	45.6	
9.7	58 18.8	7.5		8.6	41.5	51.1	A	9.0	45.9	55.5	A	9.2	31.3	9.0		9.8	58 13.9	15.0	
9.8	21.9	31.7		10	10 3.5	20.3		9.3	49.1	0.4		8.0	43.8	12.9	B	9.6	20.1	45.3	
9.9	42.2	31.0		9.0	4.7	48.5		9.5	26 8.0	41.9		9.5	46.3	8.0		9.4	59.2	29.7	
9.0	42.7	19.5	A	9.5	14.4	26.4		9.5	8.2	27.1		9.6	43 12.7	50.5		9.3	59 2.4	7.5	
8.7	48.9	28.1	A	9.5	19.1	31.4		9.2	31.5	10.3		9.5	17.8	31.6		9.5	28.7	47.4	
10	54.1	8.4		9.4	37.0	0.5		9.3	33.8	59.9	M	8.9	42.2	54.9	A	7.3	35.4	27.9	WZ
9.7	59 1.4	19.9		9.0	43.5	1.4		8.2	41.6	5.0	B	10	44.9	22.0		9.4	36.7	43.6	
8.4	3.2	4.8	A	8.7	49.4	53.1	A	9.8	27 24.0	18.3		9.2	46.2	57.5		9.1	41.1	47.6	
9.0	35.3	41.8		8.7	50.7	53.7	A	9.0	39.1	43.2		10	58.4	23.1		9.9	0 57.6	11.9	
9.0	40.7	47.0		9.4	11 7.6	15.1		9.2	47.1	0.8		9.7	44 9.5	42.1		8.3	2 16.3	42.1	A
9.2	54.7	34.4	M	9.7	16.9	29.0		9.1	58.6	4.4	M	9.5	53.8	1.8		9.2	42.2	23.2	A
9.5	0 9.6	32.4		7.2	12 48.6	25.8	L	9.1	28 31.5	22.0		9.8	45 38.9	29.7		9.8	44.1	13.6	
5.3	14.7	45.7	A	8.5	13 2.7	13.0		8.8	58.8	40.8		9.4	56.7	51.0		6.0	59.5	56.4	B
var	14.8	55.8		9.7	36.7	10.5		8.7	29 27.2	4.0	A	9.3	56.7	24.8		9.6	3 14.4	54.2	
9.5	17.8	23.9		9.0	38.7	16.5	A	10	28.2	12.2		9.8	46 11.6	1.1		7.3	4 45.7	36.1	B
9.4	25.1	6.4		9.8	42.2	8.0		9.8	29.1	32.3		9.8	15.1	1.1		9.8	5 1.2	1.3	
10	25.3	58.8		9.8	53.0	26.7		9.7	30 38.2	10.6		9.5	24.2	2.9		9.8	5.3	46.1	
9.5	29.4	12.4		9.2	14 2.0	35.8		9.9	31 7.3	4.1		9.8	47 15.8	40.1		9.2	38.8	21.8	
9.0	1 8.7	4.4		9.0	2.0	18.6	A	9.8	8.0	20.6		8.5	31.0	5.9	A	9.4	6 1.9	37.4	
6.5	15.4	8.8	L	9.6	5.1	52.5		9.5	8.2	45.3		7.2	32.4	49.2	A	5.5	17.5	47.5	A
8.3	16.4	37.6	M	10	12.6	38.4		9.5	21.4	41.7		9.3	33.5	14.4		9.0	27.1	55.4	
9.8	26.8	45.9		9.8	45.0	25.3		9.1	32.3	19.7		10	48 2.4	11.9		9.0	28.5	44.9	A
10	41.2	42.6		9.8	48.8	14.6		9.3	38.5	52.1		9.6	28.6	24.1		8.8	29.7	39.4	A
9.6	41.3	14.1		9.5	15 16.3	46.1		9.8	56.1	25.6		9.1	30.5	27.1	WC	9.3	47.7	54.5	
9.3	49.4	27.0		9.9	26.4	44.1		9.4	32 2.6	34.8		9.0	30.6	12.8	WZ	9.2	7 13.3	9.7	
9.8	58.3	25.7		9.9	47.2	10.5		9.2	23.5	55.0		9.8	33.4	43.2		8.6	39.4	59.3	A
10	2 7.9	38.5		5.3	56.0	27.7	A	9.3	41.4	42.7		9.3	49 25.2	48.4	A	9.4	47.2	54.0	
9.8	16.3	4.4		10	16 5.2	0.1		9.6	33 15.0	36.2		8.8	25.7	50.3	A	9.2	8 9.1	50.5	A
9.3	29.3	8.6		9.0	33.7	0.4		9.1	23.0	57.2		9.8	29.8	37.7		9.9	9 1.4	52.4	
9.5	32.6	13.5		9.0	46.3	34.0	A	9.0	27.8	12.6	A	9.0	50 12.9	25.8	R	9.1	36.9	11.4	A
9.8	45.8	7.3		9.0	49.2	4.6	A	9.5	38.5	43.2		6.2	37.6	52.5	A	8.8	59.5	12.9	A
9.5	56.4	19.0		9.0	17 7.7	0.1	A	9.5	46.6	56.2		9.8	51 22.8	48.3		9.3	10 16.0	19.5	
9.9	3 23.9	32.6		10	18.3	16.0		10	34 21.4	20.7		9.3	23.0	50.4		8.6	27.7	43.3	A
9.5	32.4	44.8		9.5	37.3	4.3		9.3	43.0	33.4	A	9.8	24.7	41.7		9.3	31.9	17.9	
9.3	43.5	44.4	WZ	8.8	56.4	15.3		9.3	44.2	58.2		9.4	25.7	54.3		9.7	32.0	53.1	
9.5	43.9	58.5		7.5	18 8.3	37.2	A	8.5	50.9	4.1	M	9.7	38.4	24.5		9.0	33.2	13.0	A
9.5	4 14.3	26.9		8.5	13.9	2.8	A	9.3	35 5.7	34.5		9.5	40.7	6.8		7.7	36.2	27.3	B
9.8	17.3	1.1		9.8	39.6	34.5		9.8	34.5	45.8		9.5	44.5	11.3		9.0	39.0	16.8	A
7.7	20.9	36.1	A	9.2	52.9	20.7		9.7	39.3	55.9		9.4	44.6	19.3	A	9.8	11 2.5	6.0	
9.4	30.4	8.8		6.4	19 1.1	49.0	L	9.0	44.6	25.3	A	9.5	44.7	31.8		9.5	25.9	31.3	

5934: nach Peters (A. N. 99.2360): ist möglicherweise auch im grössten Lichte < 10

5972: 42°13 23′0″3 B_1, Ep. 1883.65

6201—6260

m	22h m	s	−21° ′	
9.5	11	29.6	50.9	
10		50.6	49.0	
9.8		50.8	34.8	
9.8	12	19.5	13.8	
9.3	13	5.0	50.6	
8.9		44.0	30.8	A
8.5		59.7	33.2	A
9.8	14	23.0	28.3	
9.4		23.0	49.7	
9.8		25.4	57.3	
9.2		38.8	48.1	
10	15	25.7	14.2	
8.5		33.7	2.5	A
8.6		47.7	20.7	A
9.8	16	42.2	7.0	
9.8	17	2.5	27.3	
10		2.6	44.1	
9.5		24.7	11.6	
9.5		43.0	21.0	
9.4		54.6	59.4	
9.5	18	5.8	4.7	
9.9		19.5	25.7	
9.6		42.7	49.3	
10		51.4	35.5	
10		54.9	57.4	
9.0	19	10.8	3.3	A
9.7		37.7	59.2	
9.7	20	5.0	27.5	
9.0		15.4	7.3	A
9.3		33.8	56.1	
9.8		53.5	12.9	
10	21	2.8	24.5	
10		3.7	33.5	
8.3		11.0	8.4	A
9.3		13.9	30.6	
9.8		15.3	58.1	
9.4		17.0	42.1	
9.8		29.9	41.5	
neb		34.0	35.0	
9.5	22	20.0	17.7	
9.6		27.4	34.5	
9.5	23	52.1	29.6	
10		59.1	31.3	
9.4	24	14.8	31.0	
9.2		29.5	27.4	
9.2	25	11.5	57.4	
9.5		38.4	50.0	
9.2	26	4.1	2.3	
9.8		15.9	27.9	
9.5		45.4	41.1	
5.7		46.1	26.9	A
9.8		48.4	37.5	
9.2	27	56.6	41.4	
7.3		59.9	40.9	A
9.5	28	1.2	18.6	
9.4		17.8	49.1	
7.8		53.2	49.8	A
9.4		54.3	9.5	
9.6	29	9.4	33.7	
10		9.5	16.5	

6261—6320

m	22h m	s	−21° ′	
7.0	29	37.3	7.9	B
9.5	30	4.1	35.4	
9.4		4.1	12.7	
9.0		4.8	5.0	
9.5		21.8	3.5	
8.7		38.0	35.1	
9.0		49.4	22.0	
9.8	31	24.4	5.6	
10		30.9	49.2	
9.3		36.5	26.1	
8.9		42.6	48.5	WZ
9.4		52.4	14.8	
10	32	14.3	12.7	
9.0		17.3	28.0	
9.2		25.1	2.0	
9.8		25.5	18.2	
9.6		31.4	50.5	
9.4	33	9.2	25.9	
9.7		18.1	43.6	
9.5		28.5	22.7	
9.8		54.6	17.0	
9.4	34	6.8	46.7	
9.0		7.4	32.4	WZ
9.6		7.9	49.1	
9.9		28.2	52.6	
9.5		31.0	22.8	
8.6		45.7	42.1	WC
9.0		58.8	56.0	WZ
10	35	52.6	6.9	
9.8		54.9	51.7	
9.0	36	11.3	30.2	WZ
9.5		14.1	33.6	
9.6		37.6	4.8	
9.3		43.8	42.3	A
9.1	37	20.7	6.8	
9.0		27.4	37.9	A
9.0		53.1	25.5	A
9.4	38	11.1	36.1	WC
9.4		18.3	49.5	
9.6		23.3	49.8	
8.5		47.2	1.3	A
9.9		55.5	44.8	
7.9		59.8	33.2	A
9.7	39	14.4	35.7	
8.5		35.5	48.6	A
9.8	41	0.4	57.1	
9.5		1.5	15.4	
9.1		24.0	1.6	B
9.1		25.6	44.5	WZ
7.3	42	7.1	2.9	B
9.8		12.8	19.7	
9.5	43	1.0	26.1	
9.5		28.2	47.3	
8.5		49.2	42.6	WZ
8.3	44	39.0	56.9	A
9.3		57.7	1.7	
8.9	46	14.3	8.4	B
9.1		41.3	37.7	B
9.3		43.2	32.2	
9.5	47	2.3	24.6	

6321—6380

m	22h—23h m	s	−21° ′	
9.1	47	32.4	57.6	WZ
9.3		41.6	32.5	
9.4	48	0.4	4.3	
9.6		5.0	31.7	
8.5		7.9	18.4	B
9.4		10.4	7.2	
9.3		16.6	52.0	
9.8		50.5	43.7	
9.4	49	6.5	53.3	
var		19.7	7.0	B
9.0		22.2	56.4	WZ
9.7		28.9	11.7	B
8.3		43.4	26.5	A
7.5		50.4	2.6	B
10		53.3	18.6	
9.6	50	15.0	22.0	
10		26.5	36.0	
9.1		33.6	58.3	WZ
9.6		54.5	36.5	
9.3	51	6.4	25.1	
8.9		8.6	39.8	A
9.3		36.5	23.3	
10		45.5	20.0	
10	52	6.0	59.6	
9.7		17.6	24.4	
9.6		29.4	55.8	
10		30.1	32.2	
8.8		47.2	35.7	WZ
9.5	53	30.7	42.6	
9.1	54	12.6	38.9	
9.2		28.2	17.1	
10		32.1	14.8	
9.0		41.7	18.6	WZ
6.4		59.1	38.4	A
9.5	55	16.4	42.4	
8.5		40.1	23.1	A
9.7		44.9	56.3	
10	56	20.3	3.1	
8.5	57	37.6	25.2	WZ
9.2		54.7	57.0	
8.9	59	19.0	15.0	
9.5		34.0	39.0	
9.7	0	6.6	29.1	
9.0		19.1	22.5	WZ
9.1		52.0	18.1	
9.0	1	11.1	38.4	
9.9		32.1	35.7	
4.4		41.8	57.1	A
9.9		54.8	51.2	
9.1		57.1	45.4	
9.8	2	19.9	34.9	
8.3	3	7.4	48.2	A
9.1		13.9	36.1	
9.8		26.7	8.5	
9.3		29.7	19.0	
9.0		53.5	47.4	A
9.5	4	42.5	48.9	
9.0		47.9	53.8	
10		52.3	11.2	
9.8		54.0	49.3	

6381—6440

m	23h m	s	−21° ′	
9.0	4	58.2	21.3	WZ
9.4	6	8.8	3.0	
9.8		17.0	57.6	
9.8		27.7	53.4	
9.3		33.8	35.0	
9.6	7	24.5	16.7	
9.2		37.4	17.9	WZ
9.4		38.2	23.9	
9.8		51.5	18.6	
9.8	8	0.5	5.9	
10		14.0	1.0	
8.8		16.9	4.7	WZ
9.5		18.2	9.7	
10		42.4	20.2	
10		51.5	24.6	
8.3		53.8	58.1	A
7.8	9	8.1	59.2	A
7.8		27.7	28.4	B
9.8		32.5	3.2	
9.4	10	4.6	6.1	WZ
10	11	22.8	29.3	
10		51.5	45.2	
8.5		52.8	29.7	A
9.3	12	28.7	51.6	
9.0		35.9	44.2	WZ
9.4		47.5	39.0	
9.5	13	30.6	56.0	
8.5		40.0	38.6	A
8.5		54.7	5.4	WZ
9.3		59.3	35.8	
9.8	14	3.0	46.8	
9.5		16.3	47.4	
9.8	15	23.0	30.5	
9.3		44.4	20.0	
8.5	16	48.8	49.5	WZ
8.5		59.2	11.3	WZ
9.0	17	14.0	4.5	WZ
9.3		20.7	39.2	
8.2	18	14.7	24.3	P
5.5		24.4	26.3	R
8.7		52.7	59.4	B
8.9	19	33.8	32.4	
8.9	20	52.6	16.0	A
9.4	21	44.7	8.5	
9.8		56.2	2.3	
8.9	22	10.2	6.1	A
9.5		12.1	7.0	
8.4		17.2	22.4	A
9.7		32.9	52.7	
9.5		36.3	57.5	
10		47.7	0.3	
9.9	23	35.3	4.3	
9.7		45.0	59.9	
9.8	24	10.0	59.7	
9.6	25	0.0	29.6	
9.1		18.8	58.9	
5.8		40.4	42.8	A
9.8		59.9	34.8	
9.2	26	58.9	54.3	WZ
9.4	27	10.7	23.5	

6441—6500

m	23h m	s	−21° ′	
9.8	27	14.4	48.6	
9.4		18.6	51.3	
10		57.4	29.4	
9.8	28	16.0	49.1	
9.8		23.8	58.6	
9.9		43.1	26.5	
9.8		44.0	4.0	
9.7		47.4	28.4	
9.7	29	39.6	44.4	
9.6		42.8	17.8	
9.7		43.6	44.2	
9.0	30	5.3	18.0	A
7.8	31	7.1	40.1	A
9.7		20.9	28.2	
9.3		23.9	20.6	
9.9		24.2	26.6	
9.1		53.9	49.3	
9.3		55.4	21.8	WZ
9.5	33	22.2	31.5	
10		24.0	44.6	
8.7		45.5	16.0	WZ
9.6		56.3	30.9	
9.8	34	27.5	39.6	
10		57.0	48.9	
9.9	35	2.3	22.1	
9.3		17.1	41.1	
8.0		45.5	53.6	A
8.5	36	13.8	4.7	WZ
9.5	37	4.3	46.9	
10		38.9	44.7	
9.9		42.4	21.8	
9.7	39	46.2	30.1	
9.5		55.9	36.9	
9.8	40	11.0	38.4	
9.6		14.9	26.5	
10		37.1	18.2	
10		48.6	26.7	
9.2		58.5	54.9	
9.5	41	9.0	56.3	
8.5		37.1	49.4	B
9.9		44.2	21.0	
9.1		49.0	41.8	
8.5		55.7	14.8	WZ
8.9	42	19.2	18.9	
8.3		44.6	40.5	A
6.8	43	3.7	2.1	B
9.8		41.3	2.3	
8.6	44	2.4	35.6	A
9.8		39.3	14.2	
9.8	45	18.5	28.9	
9.0	46	6.2	1.8	
7.2		9.4	19.1	A
9.5		24.3	45.4	
9.7		46.9	32.1	
10	47	6.5	20.0	
9.7		24.4	39.5	
9.4	48	3.9	5.9	
7.8		6.4	45.4	B
8.6		29.5	16.5	WZ
6.5	49	42.0	38.2	B

6501—6510				6511—6520				6521—6529				6530—6538			
	23h	—21°			23h	—21°			23h	—21°			23h	—21°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.2	50 9.2	59.0		9.0	51 56.3	44.7	WZ	9.1	56 36.9	41.5		9.3	57 56.6	1.7	
10	30.1	2.6		9.2	52 29.3	48.9		9.7	42.5	32.0		10	58 2.0	32.1	
9.7	34.6	29.2		9.0	36.2	43.0	WZ	9.6	44.4	43.4		9.2	31.9	27.1	
9.3	41.3	25.5		10	53 14.3	7.9		8.8	52.8	22.2		9.3	54.1	5.6	
8.6	54.6	7.4	A	8.8	28.8	14.0	A	9.5	57 4.1	30.4		9.2	58.0	39.0	
9.1	59.6	5.8	A	8.3	42.7	30.5	A	9.0	12.0	43.1		9.5	59 15.3	15.9	
9.5	51 10.0	41.4		8.8	54 43.5	40.4	A	8.8	41.5	25.5		9.6	17.7	22.5	
8.4	39.0	25.8	WZ	9.3	43.9	16.7		9.2	46.9	31.5		9.0	22.6	53.3	
10	44.6	38.5		10	55 2.0	59.8		9.3	51.7	31.5		9.5	38.1	19.0	
9.4	55.7	22.1		10	57.9	50.6									

Zone —22°

1—20				21—40				41—60				61—80				81—100			
	0h	—22°			0h	—22°			0h	—22°			0h	—22°			0h	—22°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
10	0 13.2	43.4		9.8	4 59.5	0.5		9.6	10 57.3	0.5		9.3	17 50.9	57.7		8.0	23 54.7	8.9	A
9.1	16.8	22.3		9.3	5 0.1	22.1		9.2	11 3.4	0.8	WZ	9.9	18 5.8	42.5		9.8	24 58.9	8.5	
9.4	27.7	0.5		8.5	5.5	52.6	A	9.1	19.0	51.2	CZ	9.1	17.4	50.3		10	25 0.7	39.6	
9.7	30.8	44.4		9.2	16.6	45.2		9.5	12 2.5	28.4		9.5	17.8	30.1		9.9	3.5	8.9	
8.2	53.5	38.9	A	9.6	41.1	27.5		7.5	13.5	36.7	A	7.0	24.3	25.7	B	9.5	28.4	53.7	
8.2	1 0.7	12.8	WZ	10	6 3.1	32.9		9.5	33.5	33.6		9.4	31.4	50.7		8.6	34.8	54.1	A
7.2	30.3	59.0	A	9.6	11.8	50.0		9.3	41.5	25.3		9.5	39.5	4.3		9.5	36.3	0.2	
7.1	34.5	0.4	A	9.4	42.9	29.8		10	13 35.6	9.7		9.6	40.3	31.0		8.3	26 0.3	39.1	WZ
9.1	50.3	52.1	CZ	9.0	58.2	22.7	A	9.7	57.9	4.2		9.0	53.3	21.2	WZ	9.5	12.8	34.0	
9.8	2 2.8	56.8		9.5	8 3.4	59.8		9.6	14 7.3	3.7		7.5	58.4	28.7	B	9.1	16.0	55.9	CZ
9.8	8.7	50.7		9.6	3.7	57.4		10	46.1	21.3		9.2	19 43.9	21.2		9.3	20.7	33.8	
8.3	11.6	11.3	A	10	13.2	17.1		9.7	15 13.2	57.8		9.5	20 43.0	47.1		9.3	23.3	9.3	
10	16.7	2.2		9.6	14.3	52.1		9.6	15.1	14.1		9.9	43.9	24.7		10	27 14.3	5.2	
9.0	18.4	42.7		9.7	33.3	4.2		9.0	22.2	44.3		9.0	47.0	6.1	WZ	8.8	34.9	41.1	A
9.0	23.3	53.4	A	10	9 2.8	20.2		9.5	46.1	20.9		9.2	21 26.0	40.9		9.1	44.4	15.0	
8.5	3 11.9	56.6	A	9.7	9.9	39.8		9.8	16 34.8	4.6		10	22 5.6	37.3		8.3	28 8.8	32.6	WZ
7.5	23.0	44.1	B	8.9	16.1	21.0	A	9.5	43.7	28.4		10	21.6	57.9		9.5	10.8	21.5	
7.8	55.0	2.9	A	9.0	16.3	24.3	B	9.6	17 12.5	40.1		8.5	53.5	16.1	A	9.8	13.9	44.0	
9.6	4 0.2	2.8		10	10 1.4	44.5		9.5	19.3	46.1		9.7	23 1.1	40.7		9.4	37.4	25.0	
9.9	2.5	5.0		8.2	42.0	38.2	A	9.7	42.7	10.6		9.5	47.7	47.9		8.8	57.8	11.9	A

—160			161—220				221—280				281—340				341—400			
	—22°		0h—1h		—22°		1h		—22°		1h		—22°		1h—2h		—22°	
s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
.8	55.7		8.0	48 12.1	43.2	A	7.8	8 22.1	29.6	WZ	9.5	34 46.2	41.1		7.0	55 48.5	40.2	A
.0	32.4		9.4	39.5	33.6		9.6	9 4.6	0.5		9.3	35 42.0	19.6		9.0	56 6.1	47.8	
.9	3.0		9.8	48.1	50.9		8.7	9.4	15.4	A	8.8	51.7	23.0	WZ	7.8	15.3	36.6	A
.4	24.2		9.5	49 24.2	56.4		8.0	45.8	34.7	A	9.3	36 2.3	3.9		9.8	33.7	3.6	
.0	12.8	A	9.8	44.7	58.7		10	11 1.8	20.7		9.2	8.3	3.8		8.4	59.5	3.3	
.2	58.3		9.1	54.0	5.7		9.4	2.9	13.1		8.0	20.7	21.2	A	9.1	57 6.0	42.2	CZ
.9	5.0		9.2	50 49.8	12.8		8.6	12 47.6	12.8	WZ	9.4	37 14.0	9.3		8.4	7.9	35.5	A
.3	8.7		9.8	51 8.4	13.2		9.8	13 37.7	13.4		9.4	22.3	36.2		8.5	26.1	43.3	A
.6	4.5	A	9.8	36.1	9.9		9.0	14 7.6	54.0		9.4	48.1	21.4		9.5	58 12.5	19.1	
.6	8.0		9.9	45.3	47.7		10	44.1	52.6		8.0	38 33.4	43.2	A	9.4	59 8.5	19.3	
.7	52.9		9.5	52 42.2	32.9		8.8	46.5	10.1	A	8.8	49.4	54.1	A	8.2	14.0	27.0	A
.8	22.5	WZ	9.0	48.4	59.7	A	9.5	47.6	54.9		10	39 10.8	10.8		8.0	14.8	51.3	A
.2	36.5		9.5	53 0.3	40.0		9.8	57.4	1.8		9.3	34.0	8.7		9.2	20.5	11.1	
.4	10.8		9.0	4.4	58.2	CZ	9.0	15 0.0	42.8		10	56.4	21.8		9.8	27.1	10.8	
.8	42.8		9.5	6.4	11.7		8.0	6.4	17.6	A	10	40 17.5	57.0		9.8	55.4	7.7	
.3	25.8		9.5	12.3	16.9		9.4	32.2	32.7		9.8	21.5	52.1		9.8	57.6	40.9	
.2	5.7		10	21.4	14.5		7.9	44.4	11.0	A	8.6	41 13.6	57.0	B	9.5	59.3	57.6	
.8	27.0	A	9.5	51.9	47.3		9.6	16 6.5	9.1		9.5	32.8	1.6		9.5	0 26.8	11.3	
.4	45.3		9.1	54 24.1	13.7		9.5	26.1	21.2		8.0	35.6	56.5	B	9.5	46.0	23.1	
.3	30.1	A	9.7	33.3	13.0		8.6	17 13.2	42.3	A	9.8	42 14.1	51.6		9.1	47.2	58.9	
.4	42.1		9.9	47.8	19.1		8.5	16.7	30.5	WZ	9.5	43 32.2	54.3		8.8	48.6	45.0	A
.7	10.1		8.0	55 4.9	23.3	A	9.4	23.2	55.2		10	51.7	57.1		9.4	50.4	4.4	
.3	20.6		8.0	20.4	23.3	A	10	39.6	3.8		9.3	59.1	15.3		7.9	1 13.4	2.5	A
.5	51.8	A	9.8	43.5	25.3		9.0	55.3	46.3		9.5	44 17.2	53.5		10	36.0	53.7	
.0	55.2		10	56 18.9	19.9		10	56.9	22.1		8.1	49.3	53.1	A	9.4	49.6	24.7	
.9	23.7		10	31.7	7.1		9.6	19 17.4	57.0		9.3	45 9.8	44.7		9.8	2 20.6	22.4	
.0	48.0	A	9.5	40.4	14.1		10	32.8	48.8		9.0	27.9	3.3		9.3	26.3	41.9	
.0	11.9		9.9	57 2.3	29.5		9.7	20 12.7	14.6		9.6	57.3	37.7		9.2	46.1	57.8	
.3	0.6		9.1	3.1	53.6		9.4	17.4	39.2		10	46 47.0	10.4		9.5	50.7	27.2	
.5	17.0		10	17.4	1.4		9.3	56.0	53.8		9.8	47 1.4	40.5		9.5	3 6.6	17.6	
.5	6.2		10	39.3	18.3		7.0	21 2.0	47.5	B	9.1	16.9	14.9		9.7	48.8	0.9	
.8	9.7		9.6	58 30.7	32.4		8.5	9.1	18.4	A	10	52.8	15.8		9.6	53.6	5.8	
.5	27.4		8.2	46.2	20.3	A	9.4	22 35.8	13.9		9.9	58.3	0.2		9.4	4 27.2	30.8	
.6	30.5	A	9.9	58.7	53.7		5.0	37.9	22.1	A	9.8	48 17.3	56.9		9.4	34.2	23.9	
.4	5.2		9.0	59 15.1	27.5	A	10	23 51.0	22.6		9.5	21.4	28.5		8.7	52.2	6.4	
.1	31.9		9.1	25.4	50.8		9.7	59.3	36.5		10	22.5	40.2		8.5	5 20.5	14.6	WZ
.1	18.0		9.4	35.7	48.3		9.2	24 14.6	15.6	A	9.8	26.4	16.4		9.4	6 11.9	38.6	
.6	11.4	B	9.2	40.7	47.8		9.4	16.2	2.5		8.6	39.0	45.5	WZ	9.0	52.5	41.7	A
.3	53.6	A	10	48.7	54.6		9.5	18.4	3.4		9.8	41.2	23.4		9.8	8 5.4	30.4	
.2	36.8		9.9	0 12.2	27.2		9.8	49.6	4.3		9.1	49 2.0	43.1		9.6	58.7	22.5	
.4	14.8	WZ	9.5	37.3	36.2		9.0	26 12.7	34.5	A	8.3	8.4	32.0	A	9.8	59.4	3.7	
.8	37.0		9.3	59.4	57.4		9.2	13.4	28.5		10	30.0	59.4		10	9 30.8	34.1	
.9	57.2		8.7	1 1.0	23.4	A	9.4	27 23.3	59.4		10	50 26.0	53.0		9.3	10 0.2	55.0	
.1	12.0		9.5	21.1	4.2		9.8	28 52.4	9.6		9.0	53.5	21.8		8.3	21.4	31.4	WZ
.4	56.1		9.1	21.5	17.8	A	9.1	29 19.9	21.9	WZ	8.0	51 0.6	36.9	A	9.8	21.8	10.3	
.2	19.4		9.5	26.9	55.0		8.9	49.9	11.3		9.8	10.6	25.5		8.5	56.6	50.0	A
.5	13.1	A	9.3	55.3	18.4		9.5	30 16.0	11.0		10	22.9	2.7		9.3	12 1.0	30.8	
.4	23.9		9.0	2 5.8	47.9	A	9.8	36.5	22.5		9.0	52 1.7	54.3	A	9.0	7.0	34.7	
46	19.0	51.4	9.3	3 44.0	11.4		9.6	31 33.0	34.9		9.1	5.2	53.9	CZ	9.2	44.7	18.6	
.5	24.5	59.7	A	9.0	58.5	46.0		9.8	47.2	24.3		8.5	16.4	58.7	A	9.9	13 21.6	41.5	
.5	45.5	1.7		8.8	4 47.5	40.2		9.4	50.7	8.3		9.2	16.4	57.1	CZ	9.1	41.7	21.8	
.5	46.5	4.8	A	9.4	5 22.8	44.5		6.0	55.3	0.5	A	9.5	53 21.9	49.2		8.1	44.2	47.2	B
.0	47 11.0	43.5		9.8	57.0	18.1		9.3	32 7.1	22.5		9.5	36.8	58.4		9.3	47.2	43.9	
.0	30.7	10.0		10	6 18.9	5.9		10	55.5	40.0		8.2	42.5	46.9	A	10	14 25.7	15.5	
.5	31.6	15.4	A	9.9	25.6	31.5		9.5	33 7.4	12.3		9.7	55.1	28.3		9.4	15 15.6	10.8	
.9	39.6	10.7		8.8	45.2	43.1		9.3	38.6	3.7		9.5	54 11.7	41.4		9.2	30.8	22.6	
.3	42.0	31.0		9.5	7 11.9	43.2		7.8	34 16.2	27.4	P	9.8	23.2	19.5		8.0	35.1	32.0	A
.2	48 1.0	26.7		9.5	34.2	56.9		8.7	21.2	4.1		9.0	55 3.6	59.7		10	16 4.3	28.2	
.4	5.3	12.0		9.8	40.7	39.7		9.2	24.2	50.9		8.4	14.2	25.9		9.9	27.7	55.2	
.3	8.4	49.6		10	59.6	11.9		8.5	31.7	52.5	A	9.7	30.7	45.5		9.9	31.4	44.0	

401—460				461—520				521—580				581—640				641—700			
	2h		−22°		2h		−22°		2h—3h		−22°		3h		−22°		3h		−22°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	
8.9	16	58.6	28.4	A	8.5	34	20.1	33.0	A	10	51	17.0	12.1		9.1	11	50.5	27.9	A	9.4	32	6.6	21.7	
9.3	17	0.1	22.8		9.5	35	1.2	38.0		9.8		32.8	8.5		9.8	12	41.0	4.9		9.4		8.5	20.4	
9.1		10.8	16.4		9.6		29.5	55.2		10		57.4	17.7		9.1		57.1	54.5	A	9.4		42.3	12.7	
8.9		24.8	7.3		9.2		40.7	11.3		9.3	52	31.5	6.7		4.0	13	3.5	16.9	A	8.0		54.6	47.8	A
9.1	18	0.7	24.0		8.3		52.5	5.1	A	9.3	53	24.9	53.1		9.5		7.2	27.2		9.5	33	3.2	26.8	
9.8		4.5	12.8		10		53.0	11.2		9.7	54	58.0	1.4		9.3		13.0	57.1		9.4		9.5	37.5	
9.0		25.8	11.5		9.0		54.0	26.4		9.8	55	7.1	23.5		9.4		43.1	44.8		9.6		36.3	54.4	
9.1		35.9	40.0		9.6	36	17.5	8.5		9.4		7.6	10.1		10		56.0	18.7		8.3		42.0	38.6	A
7.8		44.2	28.1	A	9.8		31.2	24.7		8.9		16.5	41.4		9.8	14	26.7	21.0		8.6	34	2.4	59.4	A
9.5		48.8	29.1		9.8	37	30.1	21.0		8.1		41.8	19.6		9.8		32.8	56.5		9.0		14.8	25.4	
9.8		58.6	15.7		9.5		39.1	39.2		9.3		48.2	24.7		9.0		42.5	4.8	A	9.8		45.9	22.8	
9.5	19	39.7	18.4		9.4		51.5	42.5		9.2		52.2	56.9		9.1	15	27.4	7.4		8.8		56.0	36.1	A
9.1		44.4	41.0		9.6	38	3.4	18.1		9.3		53.8	30.5		8.5		35.9	37.3	A	9.5	35	12.8	52.6	
9.3	20	8.2	52.5		7.2		27.9	46.8	A	9.7	56	4.0	3.6		9.8	16	9.2	7.6		9.0		50.9	54.6	A
9.6		16.9	35.5		10		53.6	7.8		7.7		24.2	25.3	B	9.8		14.1	1.1		9.6		53.9	7.6	
9.4		34.2	54.5		10	39	14.4	4.4		8.8		37.1	58.7	A	9.3		16.7	18.7		9.4	36	13.5	23.3	
9.4	21	33.1	54.1		7.3		50.5	16.3	A	9.4	57	7.7	9.6		9.2	17	1.5	14.6		8.3		16.8	26.4	B
9.2		33.5	0.3		9.5		54.6	51.4		9.0		25.9	27.6	WZ	9.0		2.1	3.5		9.0		24.2	2.0	A
9.2		46.9	25.1		6.6	40	9.3	15.2	A	10		34.6	19.0		9.8		17.3	49.2		8.5		57.1	44.6	A
9.7		56.5	1.0		9.1		32.0	18.6	A	9.4	58	1.8	58.5		9.5		20.1	46.3		9.5	37	4.8	38.9	
9.5	22	17.6	37.9		9.4		57.5	35.8		9.2		20.6	13.0		8.4		57.4	10.8	A	9.8		16.4	3.0	
8.4		22.1	13.2	WZ	9.7	41	20.1	21.2		10		39.5	30.2		10	18	17.2	1.0		8.6		33.3	23.8	A
9.0		48.3	57.4	CZ	9.7		37.7	16.2		9.8		49.2	34.3		9.5		37.0	30.7		9.2		35.7	11.3	
9.0		52.7	5.0		10		59.3	52.2		9.0		56.6	44.5	WZ	9.0	19	2.4	30.0		9.0		44.3	1.2	
9.5	23	24.0	49.5		9.1	42	46.8	15.7	WZ	10		59.1	24.8		8.5		31.9	34.9	A	8.7		45.5	29.8	A
9.5		27.3	52.7		10	43	5.5	15.2		9.9	59	12.7	23.1		8.9		43.6	40.7	B	9.3	38	31.6	1.7	
9.5		57.4	11.1		8.3		8.5	19.5	WZ	9.5		28.3	26.4		8.7	20	20.9	10.5	A	8.3		34.5	2.7	WZ
9.5		59.5	44.9		9.5		16.2	44.6		9.4		34.0	22.6	A	9.4		21.6	2.7		9.8		52.1	22.8	
9.4		59.6	32.0		8.9		36.3	46.4	CZ	9.1	0	52.3	36.7		9.4		34.0	35.8		9.2		52.4	25.7	A
9.4	24	3.7	40.1		9.0	44	5.4	9.0		9.5	1	13.8	48.3		9.6		41.5	26.0		9.5		56.5	31.9	
9.6		22.5	15.2		9.1		15.8	46.2		9.5		29.0	31.5		9.3		42.3	51.2		9.0	39	8.3	48.2	A
9.8		46.4	30.5		8.5		36.1	1.4		9.2	2	10.6	15.7	A	9.4	21	23.4	57.2		8.2		8.9	34.2	B
10		55.9	10.1		9.2		39.5	58.3		9.6		11.1	0.2		9.7		44.5	8.5		9.8		31.5	54.3	
9.0		58.8	43.5	A	8.6		47.5	14.9		9.4		27.2	12.0	A	9.5	23	16.9	38.6		9.4		38.9	34.6	
9.1	25	24.9	54.9		9.1	45	7.2	46.6		9.6		36.1	1.4		9.5		16.9	23.8		9.0	40	2.4	25.2	A
9.1		34.6	25.4		9.1		8.4	0.4		8.8		38.9	23.4	A	9.7		56.7	47.6		9.5		26.8	21.4	
9.4		35.7	35.5		9.2		17.8	25.3		9.6		54.5	59.8		9.4	24	1.6	33.7		9.8		50.0	17.3	
8.8		38.8	8.8		9.0		17.9	48.7		9.3	3	33.3	44.1		9.0		20.3	49.2	A	10		51.1	6.4	
9.2	26	54.7	18.9		9.4	46	3.6	59.4		8.5		48.4	14.8	A	9.2		29.5	57.8	A	9.0		55.0	27.9	
9.5	27	12.1	25.8		9.3		26.4	18.3		8.7		59.1	18.0	A	10		57.2	40.5		7.8	41	47.4	1.3	WZ
9.8		20.4	37.9		9.5		35.5	50.1		9.1	4	26.2	33.3	B	9.8		59.8	19.5		9.5		50.0	14.1	
9.6		42.7	24.2		7.2		47.4	41.4	A	9.4		32.6	26.1		9.7	26	5.8	2.0		8.7	42	2.0	38.5	WZ
9.7		46.5	53.1		6.3	47	3.6	58.4	A	9.3		41.0	26.5	A	9.5		7.5	22.9		9.4		2.1	52.0	
6.8		59.0	34.0	B	9.4		13.6	58.0		10	5	12.4	19.0		9.4		14.0	24.0		9.1		2.6	42.6	WZ
7.0	29	21.2	2.1	A	9.3		15.6	15.7		9.6		34.8	15.3		9.5		34.6	6.5		9.5		10.9	47.3	
9.4		31.8	28.0		9.7		42.7	24.4		9.5		39.1	23.6		10		36.9	15.5		9.8		22.5	10.0	
9.8		40.6	2.0		9.9	48	16.8	40.4		10	6	24.9	5.6		8.8	27	21.0	25.3		9.4		24.7	48.2	
9.4		49.1	45.1		9.4		35.7	47.6		8.7	7	1.3	31.0	A	3.8		22.3	7.4	A	9.7	43	22.3	14.6	
9.3		54.7	53.6		9.7		37.1	28.9		8.7		36.5	42.5	A	8.8		53.1	31.6		8.7		39.6	23.8	A
9.1	30	40.1	44.5		9.6		37.8	23.5		9.5		45.8	22.0		9.9	28	11.9	41.1		9.8	44	4.8	8.1	
10		42.9	19.4		9.0	49	6.2	1.0		10		45.9	14.5		8.5		15.3	38.1	A	9.7		5.9	52.4	
9.6	31	14.6	42.7		9.6		9.7	12.4		8.7	8	20.0	17.3	A	8.9	29	7.3	20.7		9.6		12.7	35.6	
10		26.0	38.4		10		13.7	1.4		9.2	9	5.6	43.9	A	9.5		44.8	11.3		8.8	45	28.2	53.2	A
8.5		26.2	45.8	CZ	9.2		25.8	12.3		9.5		9.5	45.0		9.2		51.5	47.6		9.5		40.6	21.5	
9.7	32	17.1	1.1		8.5	50	6.3	54.1	WZ	9.6	10	3.7	19.5		8.0	30	28.8	58.1	A	9.0		41.5	39.6	A
9.2		33.6	17.8		9.4		8.0	28.0		9.0		19.1	44.7	A	9.5		38.2	28.3		8.7	46	24.3	19.0	
9.3	33	3.2	39.0		9.1		28.6	0.4		8.3		22.5	37.3	A	8.7		44.9	16.1	A	7.0		31.5	42.6	A
9.7		25.5	31.6		9.2		40.5	40.7		10		23.3	10.0		8.5	31	32.4	34.6	WC	9.4		53.4	51.0	
9.3		28.9	58.2		9.1		44.2	42.7	A	9.8	11	38.5	1.0		8.3		55.0	44.7	A	9.9		58.7	22.5	
8.0	34	1.3	12.1	A	8.7	51	15.7	49.0	A	9.3		43.4	59.7		10	32	1.0	8.9		9.4	47	3.4	22.3	

701—760

	4h	−22°	
m	s	′	
7	43.3	33.8	
	50.6	49.0	A
	53.6	47.9	A
8	7.3	15.8	A
	14.2	9.7	
	16.9	10.0	
	33.0	41.8	
	45.7	49.6	
	46.3	13.8	A
49	4.6	15.8	
	17.4	15.8	A
	18.5	1.0	B
	25.1	17.7	A
	39.8	0.2	
	52.6	44.5	
	52.7	49.5	
50	43.5	23.5	
	51.5	11.7	
51	33.0	54.0	A
52	15.2	10.4	
	20.3	20.5	
	38.1	29.1	
53	4.7	1.8	A
	28.9	19.1	
	53.8	39.8	
54	24.2	8.7	
	55.8	40.9	B
55	8.5	8.4	
	13.2	53.2	
	23.6	30.4	
	25.9	18.8	
	43.3	12.0	
	50.1	3.4	
56	6.2	26.8	
	26.6	23.4	WZ
	31.3	59.6	B
57	8.3	35.5	
	17.1	22.1	
	22.5	6.2	
	28.9	10.3	
	29.4	4.0	B
	54.1	17.8	
58	29.1	20.5	
	55.7	30.8	WZ
59	15.8	56.0	
	19.3	56.9	
	46.3	31.6	WZ
	47.9	7.0	
0	1.9	55.5	
	2.3	14.7	A
	14.6	49.4	
	17.0	9.5	
	24.6	3.9	A
	41.7	22.5	A
	47.9	32.1	
	48.5	47.2	
	49.5	31.1	
1	5.0	37.6	
	9.9	47.0	
2	7.9	16.9	A

761—820

m	4h m	s	−22° ′	
9.4	2	21.6	19.3	
9.5		34.4	32.4	
8.7		37.6	13.5	A
9.5	3	4.5	35.3	
9.5		15.3	24.8	
9.0		40.1	40.5	
9.5	4	23.5	27.0	
9.5		53.0	29.7	
10	5	33.2	15.7	
9.0		38.0	29.2	
9.3	6	28.6	10.9	
9.2		35.8	3.0	
9.5	7	0.5	59.2	
9.2		3.8	30.0	
9.4		16.2	21.8	
9.0		18.8	5.4	A
8.8		36.4	52.3	CZ
9.5		37.5	49.7	
9.4		40.7	24.3	
9.0	8	9.5	19.8	A
9.3		19.5	19.4	A
8.8		52.0	21.2	A
9.3	9	2.5	35.6	
9.1		22.1	29.7	
8.8		24.0	52.3	A
9.7		26.8	18.0	
6.8		36.2	30.7	A
9.5		44.1	29.6	
9.0		46.6	1.2	
10		49.9	40.1	
9.2		50.3	49.4	
8.8		55.6	54.9	A
9.5	10	1.8	11.2	
10		4.7	32.5	
8.5		53.3	40.6	A
10	11	8.3	4.9	
9.4		10.2	33.1	
9.7		20.3	6.1	
9.4		26.0	22.2	
8.9		34.7	53.7	A
8.9		40.9	43.6	A
9.4	12	15.6	21.6	
9.8		22.0	48.2	
9.3		48.2	25.0	
9.3	13	11.0	52.2	A
9.2		29.0	2.5	
9.3		42.6	14.4	
9.2		46.5	13.1	
7.2	15	31.3	6.8	A
9.8		32.8	34.1	
9.1		48.1	48.4	
9.6	16	43.4	37.8	
8.0		52.2	27.7	B
9.4	17	28.7	23.9	
9.2		32.4	34.6	
9.0		38.2	44.9	
9.5	18	1.8	29.3	
8.9		9.8	4.6	A
8.2		26.4	12.4	A
9.5	19	15.8	40.0	

821—880

m	4h m	s	−22° ′	
9.8	19	22.1	41.5	
9.8		40.8	16.6	
9.8		59.1	13.6	
9.0	20	2.5	9.3	
9.3		2.5	25.9	
9.1		22.3	58.2	A
9.7		55.5	38.7	
10	21	20.3	26.2	
9.7		26.1	56.1	
9.4		42.2	39.1	
9.3	22	0.5	6.6	
9.5		1.4	29.5	
10		27.9	10.4	
10		42.3	21.6	
9.3		59.1	55.3	
10	23	0.7	15.7	
9.2		2.8	51.5	
8.5		7.5	50.2	A
9.2		13.8	42.4	
9.1		45.5	29.0	
10	24	21.7	10.6	
9.4		24.2	57.5	
9.6		39.2	5.8	
9.7		54.8	46.7	
9.2	25	47.8	57.7	
9.7		51.9	3.8	
9.5	26	36.7	40.0	
9.5		37.8	54.3	
9.8		43.4	15.1	
9.4		54.0	8.7	
9.7	27	22.3	10.2	
9.6	28	20.5	2.6	
9.0		21.4	24.7	A
9.4		37.0	13.3	
9.4		58.9	56.9	
9.5	29	4.1	46.4	
9.7		27.4	18.6	
9.0		33.1	25.6	A
9.7		46.1	14.6	
9.6		54.6	2.0	
8.0	30	10.2	33.3	B
9.4		24.2	30.0	
8.2		28.2	34.6	A
8.6		39.7	36.0	A
9.7		41.1	10.3	
9.4		59.8	1.6	
7.0	31	2.4	54.9	B
9.7		30.0	4.5	
9.3		41.3	41.2	
9.8	32	8.9	11.8	
9.5		28.4	18.1	
9.0		46.7	26.8	A
9.5		46.8	52.8	
9.8	33	2.0	12.5	
9.5		7.9	53.7	
9.8		25.4	19.0	
9.5		26.0	56.9	
8.0		53.8	54.1	A
9.8	34	19.6	10.9	
9.7		36.8	8.1	

881—940

m	4h m	s	−22° ′	
9.1	34	41.9	34.4	
8.9		51.8	40.0	
9.3	35	13.9	39.9	
9.6		30.1	3.3	
9.6		40.4	3.0	
9.5		40.4	43.5	
8.8		51.9	53.3	
9.9	36	7.6	15.7	
9.6		17.3	33.4	
9.9		22.3	32.8	
9.0		30.2	7.0	A
10		36.6	36.3	
9.8		43.2	16.6	
9.3		43.4	12.7	
8.5		46.8	30.2	A
8.2		53.4	36.0	A
9.3	37	16.5	8.4	
9.2		19.9	41.8	
9.8		25.4	39.8	
9.1		55.8	32.5	A
9.5	38	6.5	49.0	
9.3		31.0	41.6	A
9.2		40.5	57.3	
8.9		51.9	22.6	
9.2	39	4.5	46.5	A
9.7		10.5	6.2	
9.5		12.4	38.2	
9.5		22.2	43.4	
9.5		22.3	18.7	
9.4		29.9	29.0	
9.3		33.0	42.9	
10		33.1	5.3	
9.0	40	29.4	33.9	
9.1		52.5	53.1	A
9.2	41	2.3	28.5	
8.3		13.5	49.0	A
9.5	42	13.4	21.8	
9.8		31.7	7.0	
9.4		52.0	39.9	
7.9		59.0	8.6	A
10	43	1.9	2.0	
9.8		2.0	13.1	
9.8		7.1	54.0	
8.4		8.6	59.2	A
9.6		19.5	42.8	
9.2		31.6	30.6	
9.8		44.8	29.6	
8.9		46.5	29.7	A
9.5		46.7	50.5	
9.8	44	27.2	2.5	
10		35.6	40.2	
9.5		49.6	50.3	
8.3	45	23.5	34.2	
9.3		24.9	25.0	
9.6		55.0	44.7	
9.0	46	15.3	22.9	
9.4		29.5	32.2	
9.3		33.6	42.9	
8.8		52.7	8.0	
9.1	47	4.7	56.2	

941—1000

m	4h m	s	−22° ′	
9.8	47	6.3	5.9	
9.5		12.0	25.4	
9.4		24.5	25.6	
9.2		45.5	25.7	
9.3		49.2	47.0	
9.8		52.1	36.2	
9.4	48	5.4	6.5	
8.8		33.5	20.5	
9.8		52.2	55.8	
9.0	49	2.9	3.1	
9.3		3.6	33.7	
9.0		41.4	20.2	
9.5		42.8	9.0	
10		43.8	6.7	
9.2		54.4	7.3	
9.7		57.0	13.3	
9.4	50	3.7	41.0	
9.7		40.8	7.8	
8.2		47.2	16.0	A
8.5	51	10.7	42.7	
9.2		21.1	37.5	
10		37.3	54.4	
9.6		39.5	23.3	
7.1		54.9	14.4	A
9.5		59.4	8.2	
9.5	52	18.2	39.6	
9.2		48.1	24.0	A
9.0		50.2	52.6	A
8.8	53	25.8	5.1	
7.8		29.1	37.5	A
9.4		43.2	39.3	
10	54	1.4	0.8	
9.0		18.6	28.7	A
9.0		46.3	49.1	
9.0		59.9	57.1	A
9.7	55	0.3	52.5	
9.0		17.7	36.0	A
9.0		35.0	14.3	
9.8		37.2	32.1	
9.5		41.3	47.5	
8.8		57.0	17.8	
9.8	56	0.6	56.3	
9.1		19.0	10.0	
9.3		25.4	59.5	C
9.5		53.9	9.1	
9.2		57.7	17.4	E
9.4	57	6.6	20.2	
9.1		11.7	32.9	A
9.3		15.8	44.4	
9.5		25.4	18.6	
9.7		52.5	9.3	
9.3		57.2	25.3	I
9.1	58	0.9	0.1	I
9.5		39.0	3.2	
8.7		40.6	6.5	
9.0		52.3	27.5	
9.5		59.9	53.4	
9.7	59	13.2	47.8	
9.6		16.1	44.1	
3.7		19.1	34.0	I

1001—1060				1061—1120				1121—1180				1181—1240				1241—1300			
	4h—5h	—22°			5h	—22°			5h	—22°			5h	—22°			5h	—22°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.6	59 26.0	6.9		9.9	10 52.5	29.7		9.8	22 11.0	21.3		9.5	33 0.1	44.5		9.1	43 31.6	12.6	
8.7	27.7	42.9	B	10	55.0	31.8		6.6	15.7	33.6		9.4	22.2	55.0		9.4	44 9.3	46.4	
9.1	33.8	52.0		10	55.7	3.6		9.1	24.9	59.7		9.7	37.8	6.7		8.7	24.7	36.7	
9.4	47.1	18.6		9.4	11 3.9	14.6		9.5	48.1	48.9		9.0	39.7	54.8	A	9.1	55.3	15.3	
9.3	48.2	21.0		9.2	35.4	27.6		9.4	54.6	44.4		9.2	34 6.2	47.2		9.3	45 8.3	49.0	
9.2	56.7	23.0		9.0	48.6	57.1	A	8.9	23 10.6	5.7	A	8.0	20.1	43.6	B	6.9	24.8	57.8	B
8.8	59.9	55.2		9.4	51.5	28.4		10	15.9	18.8		8.2	25.5	13.8		9.4	26.4	13.4	
9.8	0 2.7	4.9		9.6	12 15.9	55.1		10	25.4	31.4		9.8	40.8	15.0		9.8	31.1	55.5	
9.9	16.6	12.3		9.2	38.0	36.3		8.0	34.1	50.2	A	10	42.0	2.2		9.0	32.1	4.1	
10	17.5	10.1		8.7	38.5	22.2	A	10	45.4	25.8		9.5	50.0	38.0		9.6	36.4	59.9	
9.6	52.8	32.1		8.4	44.5	35.2	A	8.9	48.8	18.6	A	9.1	52.1	40.9		9.5	46 17.9	28.1	
8.5	1 10.4	50.6	A	8.2	52.6	8.1	B	9.5	53.9	0.2		9.5	35 34.2	52.5		9.7	25.7	49.4	
10	15.7	7.0		9.0	13 23.7	51.0		9.8	24 11.1	11.9		9.2	58.5	51.6		9.5	41.5	0.1	
9.4	23.3	47.4		8.8	20.4	24.1		9.3	21.6	40.8		6.5	36 7.4	27.0	B	9.0	47 5.8	30.3	
9.7	31.9	40.1		9.8	38.7	56.4		8.8	27.2	55.7	A	9.0	14.6	33.7		9.4	13.4	24.0	
9.0	33.2	49.5	A	8.0	40.6	41.8	A	9.4	25 5.3	20.4		9.8	26.8	57.8		8.2	15.3	24.5	B
9.9	37.0	56.5		9.5	48.0	42.1		10	17.1	4.5		9.5	30.2	43.5		9.7	48 0.4	10.4	
8.4	2 1.3	32.3		9.2	56.1	43.4	A	9.5	26.8	24.2		9.8	40.0	2.1		9.3	31.4	25.0	
9.3	8.0	50.4		9.1	14 17.3	25.1		9.4	35.5	59.3		9.0	46.5	28.5		9.0	39.6	52.0	A
9.4	36.4	41.1		9.5	17.7	49.9		9.5	52.9	31.7		9.5	37 7.0	30.7		9.1	49 3.3	26.8	
9.7	40.7	5.3		8.6	23.1	26.1	A	8.6	57.5	20.1	A	9.5	28.4	23.1		9.2	24.1	40.7	A
8.0	45.5	49.5	A	8.6	28.1	34.0	A	9.8	58.3	10.5		8.0	37.2	51.1	A	9.5	31.2	47.6	
9.6	5 0.6	8.7		9.5	28.5	14.5		9.5	26 4.9	40.2		9.4	43.9	45.1		9.8	32.4	19.3	
9.4	0.7	27.2		10	48.2	59.2		9.8	24.5	32.9		8.7	58.3	52.5	A	9.8	40.0	35.5	
10	11.6	22.5		9.1	53.4	50.8	A	9.8	32.1	42.9		9.0	38 2.1	35.9		9.1	45.3	9.0	
9.4	18.3	20.0		9.8	15 17.6	10.8		9.5	33.2	20.9		10	4.9	19.2		9.3	50.7	46.8	A
9.3	33.0	19.9		9.6	37.7	46.9		10	56.6	5.8		9.5	8.0	1.3		10	54.0	55.8	
7.6	34.4	41.2	B	9.4	40.5	31.0		9.4	27 8.0	2.1		9.3	11.3	1.5		8.7	50 4.5	17.5	
8.8	42.8	29.4		8.5	57.6	35.0		9.8	28.8	16.6		9.8	17.9	44.3		6.7	9.8	52.1	A
9.1	52.4	4.9	A	9.7	16 19.2	14.9		9.8	30.6	56.6		6.9	23.5	28.4	L	9.0	18.6	40.5	A
10	53.7	0.4		9.5	21.6	31.7		9.1	39.1	54.5	A	4.0	25.0	30.0	B	9.2	40.9	19.3	
9.8	4 7.4	43.9		9.4	35.3	2.3		9.8	43.5	45.2		9.4	37.3	53.1		10	41.2	42.9	
9.2	25.5	49.9		9.0	47.2	56.4		8.7	48.6	50.4	A	9.5	39.1	19.2		9.5	45.4	56.2	
8.8	48.5	13.0	A	10	54.2	41.9		9.8	28 2.5	42.5		9.7	40.2	16.1		9.3	51 22.4	11.6	
9.3	51.2	41.4		9.3	17 6.6	30.2		9.3	4.1	14.0		9.0	42.3	55.0		9.4	22.8	12.8	
9.3	54.3	28.2		9.3	7.3	24.2		9.5	8.0	41.7		9.3	45.2	53.9		9.3	34.3	26.6	
8.5	5 14.8	21.0	A	9.0	14.1	24.4		10	9.3	0.2		8.0	47.1	34.1		9.5	39.1	43.0	A
9.5	53.4	30.7		9.2	17.9	9.9		9.8	37.2	30.6		9.0	39 2.3	19.5		9.5	52 0.3	1.1	
9.6	6 5.5	2.6		7.3	31.0	20.7	B	9.3	40.1	43.5	A	9.5	11.0	31.2		9.4	26.8	54.0	
9.3	20.9	24.4	A	9.8	48.6	27.8		9.7	48.3	13.6		9.3	21.6	15.5		9.8	46.1	32.9	
8.0	41.5	41.1	A	9.1	57.6	34.1		9.5	48.7	47.7	A	9.2	22.3	56.2		8.9	55.0	35.2	A
9.7	52.5	9.2		9.1	18 30.7	34.2		9.6	55.6	3.3		9.4	27.1	13.2	A	9.3	53 4.7	28.9	A
8.6	7 19.6	12.0		8.8	38.1	30.4		9.7	29 21.8	12.8		10	45.3	41.0		9.0	6.4	10.4	A
9.8	21.0	37.5		9.5	19 12.6	20.8		9.8	48.5	35.0		9.8	40 2.2	44.3		9.5	12.9	39.0	A
9.3	32.4	29.9		9.0	14.2	30.6		9.8	51.9	21.1		9.5	27.5	10.5		9.5	19.7	17.8	
9.2	38.5	40.0	A	8.3	52.3	52.4	A	10	30 12.0	41.2		9.1	33.3	55.0		9.5	51.2	47.5	
9.5	39.1	50.9		9.5	20 11.4	59.0		9.5	17.5	30.5		9.1	34.7	41.4		8.9	55.4	6.0	A
10	44.8	2.7		9.0	25.7	38.8		9.8	56.4	0.2		9.0	35.9	47.7		10	54 30.2	4.3	
9.5	47.1	55.2		8.7	30.2	37.1		9.0	59.2	58.2		9.0	40.8	53.6		10	31.7	16.4	
9.5	48.8	9.1		9.3	35.9	57.6		8.5	31 5.3	55.5		9.8	53.2	6.0		9.6	35.0	33.8	
9.0	8 12.0	43.6	A	8.8	30.7	42.0	A	8.5	27.7	50.1		9.5	41 13.4	56.3		9.7	55 11.3	53.0	
9.3	20.0	41.4	A	10	30.9	36.8		9.3	34.0	26.1		8.8	51.8	45.5		9.2	21.9	31.3	A
9.9	29.3	23.8		9.2	39.1	26.1		9.4	40.6	5.8		9.8	57.7	13.6		9.1	32.4	9.3	A
9.5	48.2	3.3		9.5	50.0	33.3		9.5	55.7	8.1		8.0	42 14.2	6.2		9.4	41.7	46.3	
9.8	9 2.9	21.1		9.3	21 1.1	25.6		9.5	32 11.7	48.9		8.8	21.1	32.8		9.7	46.2	16.1	
9.5	13.8	21.9		9.0	34.7	31.7		9.5	33.2	24.0		9.5	34.5	27.7		9.5	56 4.4	8.8	
9.0	36.8	12.3		9.7	36.1	15.8		9.5	34.4	22.3		9.8	34.8	44.0		8.9	12.2	18.6	A
10	47.2	4.9		9.5	49.7	56.1		9.5	37.5	4.8		8.2	55.5	0.4		9.6	18.6	43.1	
9.7	10 9.0	6.1		9.4	51.2	27.2		9.8	44.7	48.9		9.0	58.6	19.5		9.5	22.3	25.6	A
8.0	44.0	25.8	B	9.5	57.4	1.4		9.3	45.4	23.8		9.1	43 30.6	16.5		9.6	43.5	16.9	

1210: goldgelb

1301—1360

	5h—6h		—22°	
m	m	s	′	
9.5	56	59.0	28.8	
10	57	3.7	5.6	
8.8		7.6	44.8	
8.8		25.1	49.0	A
9.6		40.3	56.3	
9.5		50.2	18.9	
9.8	58	0.1	8.0	
9.4		6.0	30.4	
9.7		6.8	5.1	
9.6		30.3	34.7	
9.7	59	49.4	6.3	
9.1		56.1	38.5	A
8.2	0	27.0	8.2	A
8.8		36.8	23.6	A
9.0		49.-	5.2	A
9.8	1	1.7	42.9	
9.3		2.9	58.0	
10		3.7	5.3	
9.0		6.8	15.3	A
8.5		12.0	33.6	A
9.7		35.7	6.0	
9.0		50.8	27.2	A
9.6		53.4	26.8	
9.5	2	0.5	34.3	
9.3		5.8	46.4	
9.5		38.4	29.3	
6.2		51.9	24.1	B
9.0	3	31.3	17.4	A
8.1		35.0	5.4	A
6.5		42.7	45.3	B
9.3		45.9	29.8	
9.0	4	27.6	20.1	A
9.1		41.0	3.5	A
9.9		58.1	20.7	
9.4	5	2.4	23.1	A
8.7		8.8	48.2	B
9.1		35.3	52.2	B
10		40.0	4.1	
9.2		42.2	46.4	A
9.7		42.9	42.1	
9.7	6	0.1	7.9	
8.5		26.8	20.9	B
8.5		27.6	31.5	A
9.7		58.1	6.2	
9.8	7	15.9	5.9	
9.6		17.0	17.1	
9.2		19.0	30.8	
9.8		26.7	15.0	
9.2		27.7	45.1	
9.0		31.0	59.9	A
9.7	8	1.6	17.6	
9.8		14.4	40.5	
9.3		14.6	51.5	
8.4		28.5	10.8	A
10		58.4	54.6	
8.7	9	34.4	8.7	A
9.8		48.0	8.5	
9.0		52.2	42.2	WZ
9.4		53.1	44.3	
9.5	10	16.2	41.5	

1361—1420

	6h		—22°	
m	m	s	′	
9.5	10	25.5	28.0	
9.4		29.4	25.3	
9.0		56.4	23.5	
7.0		58.5	39.4	A
8.0	11	1.9	19.4	A
9.5		26.1	36.0	
9.8		31.0	3.4	
9.5	12	4.4	24.9	
9.6		19.6	20.0	
9.4		23.6	46.6	
9.3		24.0	47.9	
9.5		37.9	57.5	
9.0		39.5	10.8	
9.4		44.8	48.4	
10		52.2	42.9	
9.1		57.2	10.7	
9.5	13	7.5	58.5	
8.7		20.8	17.3	WZ
7.2		31.0	2.6	B
9.4		38.9	14.7	
8.9		41.7	37.1	A
9.7		59.9	7.4	
9.5	14	8.0	1.5	A
9.5		15.3	46.2	
9.7		40.1	10.1	A
8.4	15	1.4	16.6	B
9.8		3.1	36.6	
9.5		5.6	1.2	
8.8		25.4	8.5	A
9.4		36.8	40.8	
9.5		36.8	6.7	
9.8		38.6	0.3	
9.4	16	0.9	53.0	
8.6		10.2	10.8	A
8.6		21.5	31.7	A
9.2		29.2	12.3	A
8.9	17	8.8	10.8	WZ
9.1		44.1	5.5	
9.3		50.0	0.3	
9.8	18	16.1	8.9	
9.5		42.5	59.6	
9.8		55.7	13.4	
9.0		58.9	18.4	
9.0	19	5.0	30.0	WZ
8.9		27.8	51.2	
9.5		48.0	55.0	
9.6		49.6	49.9	
9.5	20	0.7	44.1	
9.5		27.5	6.5	
9.0		27.8	49.6	
9.1		32.0	34.9	WZ
9.5		36.5	31.7	
9.7		44.6	1.3	
9.5	21	3.5	34.6	
8.9		8.9	46.9	
9.2		9.0	31.5	
7.8		20.7	2.1	B
9.5		24.5	25.0	
9.8		44.5	32.6	
9.1		47.4	0.8	

1421—1480

	6h		—22°	
m	m	s	′	
9.6	21	51.7	59.7	
9.3	22	20.4	20.2	
9.5		22.6	36.5	
9.5		32.1	39.4	
9.4		50.1	38.2	
9.3		54.5	13.7	A
9.8	23	8.8	24.5	
9.5		15.9	24.7	
7.0		19.5	30.0	A
9.7		33.1	4.9	
9.5		34.4	24.5	
9.8		44.3	36.7	
9.5		50.3	37.4	
7.5	24	31.8	13.3	A
9.6		36.9	0.5	
9.8		42.8	21.4	
9.5		49.6	7.0	
9.7	25	35.6	6.9	
9.7		36.1	43.2	
9.7		44.7	4.6	
9.6		47.0	3.1	
9.5	26	43.7	14.1	
9.8		45.0	2.2	
9.5		45.2	48.1	
9.8		51.9	29.4	
8.3	27	4.0	30.0	A
8.0		12.0	57.5	A
9.2		31.9	59.9	A
9.2		33.8	46.3	
9.1		36.1	35.5	
9.0		47.1	9.5	
9.5		53.5	47.1	
10	28	3.4	6.7	
9.9		4.6	42.3	
9.6		36.1	36.2	
9.2		51.8	12.3	
9.8		54.6	32.3	
5.0		58.8	51.4	A
9.2		59.7	41.4	A
9.1	29	0.8	33.3	A
10		17.2	44.5	
9.1		35.9	25.9	A
9.5		53.6	7.5	
10	30	2.4	52.1	
10		4.0	47.1	
9.7		8.5	47.4	
9.2		14.1	25.1	A
10		18.7	2.7	
9.4		19.3	49.4	
9.8		22.5	12.5	
9.4		23.2	13.9	
7.0		35.3	29.5	A
9.2		36.2	41.3	
8.3		48.0	8.9	A
9.0		49.9	53.8	
9.8	31	8.7	0.0	
9.8		12.1	31.2	
9.5		37.6	21.5	
9.8		39.0	28.3	
9.5		50.5	58.7	

1481—1540

	6h		—22°	
m	m	s	′	
8.7	32	10.2	38.5	A
10		22.4	23.5	
9.0		23.5	55.1	CZ
9.4		27.0	29.4	
9.4		43.2	15.4	
9.8		50.3	51.3	
9.5	33	6.0	19.1	
9.7		22.5	59.3	
9.7		26.0	55.5	
9.9		26.6	38.2	
8.3		46.8	46.7	A
9.3	34	11.1	38.5	
9.7	35	7.3	8.8	
8.8		12.2	4.8	A
9.0		51.3	20.8	B
9.4	36	0.0	16.5	
9.5		0.9	53.6	
8.5		1.4	18.2	A
9.2		9.3	21.9	
9.5		12.2	56.4	
10		13.4	46.0	
10		13.5	5.4	
8.7		15.8	13.0	
9.3		32.6	39.1	
6.8		39.4	18.7	B
9.5		40.5	48.7	
9.5	37	5.0	38.4	
9.8		16.8	0.3	
9.4		28.7	40.8	
9.8		55.4	55.8	
9.5	38	3.9	23.6	
8.5		6.1	25.6	A
9.4		6.5	33.4	
8.4		7.8	18.9	A
9.5		9.4	48.2	
8.5		13.5	17.0	A
9.7		20.3	4.9	
9.1		22.9	38.4	
9.5		54.1	8.8	
10	39	35.7	46.7	
10		40.3	21.7	
9.3		41.2	33.4	
9.1		55.1	54.9	
10	40	4.9	1.1	
10		9.9	3.1	
9.0		11.6	18.8	
8.3		21.4	59.9	A
9.3		33.0	2.1	
9.5		40.3	3.6	
9.3		51.0	37.1	
8.7		56.4	32.0	B
8.5	41	9.3	54.4	A
9.1		11.6	19.0	WZ
9.4		30.8	47.1	
9.5		31.2	31.2	
9.2		35.7	51.0	B
8.7		39.0	0.5	WZ
9.4	42	20.9	26.7	
9.3		24.1	45.6	A
9.6		25.3	22.4	

1541—1600

	6h		—22°	
m	m	s	′	
8.8	42	30.2	43.7	A
9.8		39.9	2.2	
10		41.0	29.2	
9.6		43.6	27.1	
9.6		50.2	13.5	
9.8		56.5	14.5	
9.0		58.0	33.3	A
9.5	43	14.4	31.4	
9.8		20.6	21.4	
10		26.9	4.4	
9.3		30.1	41.5	
8.7		46.9	18.5	A
9.3		51.5	15.0	
9.2	44	11.7	45.4	A
9.4		22.8	54.4	
9.4		28.9	1.7	
9.2		36.7	49.5	A
9.1		40.9	31.4	
9.3		41.6	9.7	
9.5		46.7	46.8	
9.8		55.5	19.7	
9.5		58.2	48.8	A
9.6	45	0.6	3.6	
9.5		20.0	2.5	
9.4		23.8	55.8	A
9.4		25.6	1.7	
9.7		42.8	18.4	
8.1		46.1	8.0	A
9.2		52.2	2.5	A
9.0		59.8	31.7	WZ
8.9	46	13.9	1.6	A
9.4		24.7	38.6	
9.4		32.3	11.5	
8.2		41.7	52.8	A
9.4		49.5	13.0	
9.1		52.2	56.4	A
9.5	47	2.8	31.3	
8.8		18.9	47.8	A
9.5		26.4	36.1	
9.3		34.4	15.6	
9.5		47.2	20.8	
7.8		47.5	9.0	
9.0		52.7	25.2	
9.9	48	5.5	11.0	
9.3		6.8	56.3	A
8.3		11.2	15.6	
9.5		12.0	36.9	
9.1		17.2	52.4	A
9.3		19.2	53.0	
9.7		34.4	13.9	
9.5		37.0	38.5	
9.0		39.9	36.0	
9.8		42.9	6.2	
8.4		53.1	45.7	A
9.8		53.6	43.0	
9.5	49	0.4	40.1	
9.8		15.8	27.0	
9.5		19.7	56.1	
9.5		22.2	1.1	
8.7		30.4	0.5	

1601—1660				1661—1720				1721—1780				1781—1840				1841—1900			
6h		—22°		6h—7h		—22°		7h		—22°		7h		—22°		7h		—22°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.1	49 38.2	12.5		9.3	55 22.1	21.7		9.0	3 11.1	32.4		9.3	10 14.9	0.9		9.8	16 29.6	28.8	
6.0	41.1	45.4	B	9.0	24.7	27.5	A	9.8	11.1	25.6		9.5	18.3	57.8		9.4	31.0	22.5	
8.9	51.6	49.6	A	9.5	25.5	27.5		8.9	13.1	15.6	A	9.1	19.7	0.7	WZ	9.6	50.3	3.1	
9.4	50 6.2	18.2		9.4	32.0	42.4		9.8	22.4	13.3		9.4	30.6	28.4		9.7	52.2	21.1	
9.7	16.9	6.9		9.5	35.3	29.5		9.6	26.6	47.5		8.3	32.9	33.6	A	9.4	56.1	54.4	
9.7	17.9	11.5		8.7	40.1	54.7	A	9.3	31.3	26.3	A	9.4	47.4	49.5		8.8	17 0.6	2.1	
9.5	21.2	47.6		9.8	53.7	41.3		9.5	33.0	17.4		9.8	47.5	7.7		9.1	12.9	23.9	
9.0	26.2	20.0		9.5	53.8	48.0		9.0	33.3	2.6	A	9.4	11 5.4	23.7		9.0	24.1	14.5	
8.0	26.8	27.5	B	9.5	56 14.9	17.4		8.7	36.4	47.1		8.8	10.6	49.2		9.0	26.7	37.5	A
9.0	27.5	27.3	A	9.7	18.1	52.0		9.5	39.7	34.4		8.5	22.2	26.7	A	9.1	29.8	41.8	
9.5	33.1	46.9		9.5	20.6	33.9		9.1	45.9	58.9	CZ	9.8	22.2	18.0		9.1	30.6	44.7	A
9.7	34.1	28.8		9.8	51.1	54.9		9.4	4 4.5	10.0		9.8	23.0	12.1		8.8	34.7	35.1	A
9.4	51.5	43.3		9.6	59.0	59.3		9.6	4.9	34.6		8.7	24.1	34.4	A	7.6	18 1.1	4.9	WZ
9.9	56.3	2.6		8.4	59.9	36.8	A	9.4	6.7	39.5		8.3	33.9	55.5	CZ	9.5	3.6	56.7	
9.8	51 2.5	35.7		9.2	57 5.1	21.6	A	9.8	16.4	44.1		8.7	41.5	56.0	CZ	6.7	7.7	38.0	A
7.1	5.9	1.0	B	9.1	5.7	25.6	A	9.4	23.1	54.1		9.7	43.9	18.7		9.4	9.4	21.1	
8.0	29.8	58.2	B	9.0	7.6	50.9	CZ	9.8	26.7	16.0		9.5	46.4	24.5		9.4	23.9	42.5	
9.5	36.0	24.4		8.5	16.1	21.5	A	9.6	31.4	3.2		7.0	12 1.5	5.0	B	10	27.8	1.1	
9.7	43.9	8.2		9.8	23.7	56.4		8.7	42.7	17.7	A	9.3	5.2	51.5		9.8	33.7	38.4	
9.7	48.1	7.2		9.1	32.2	44.8		9.0	5 3.3	17.7	A	9.5	14.0	29.8		8.9	45.3	36.1	A
9.7	49.2	35.4		8.8	49.8	6.1		9.0	4.4	45.0		9.5	17.1	29.5		9.8	19 2.7	38.5	
9.8	52.1	50.1		9.6	58 9.2	14.2		9.7	16.8	9.7		9.7	20.7	17.4		9.8	6.0	14.8	
9.1	56.5	41.2	A	9.0	9.6	32.1	A	9.0	19.1	21.9		9.7	24.8	16.9		10	33.5	56.0	
9.4	52 17.1	17.0		9.4	12.0	32.6		9.5	21.7	7.8		9.8	28.0	18.3		9.0	37.1	34.7	A
9.4	17.6	46.0	A	9.5	21.6	15.5		9.5	34.4	2.4		9.3	28.9	51.2	A	9.4	39.1	2.9	
9.6	24.9	50.9		9.5	29.9	40.1		9.4	40.1	58.6		9.5	30.0	52.8	CZ	9.6	39.9	11.1	
9.1	30.8	20.5	A	9.5	31.0	19.2		10	58.1	0.7		9.1	30.0	33.0	A	9.8	46.8	38.1	
9.5	34.7	54.9		9.5	59 5.0	51.6		9.9	6 0.1	17.7		9.4	50.7	41.3		9.8	20 6.0	55.1	
9.1	36.7	20.5	A	9.5	15.2	0.3		8.5	3.6	44.3		9.5	13 4.4	7.9		9.7	9.0	55.3	
10	55.2	53.3		9.8	23.8	49.1		8.7	16.4	45.4	WZ	9.5	7.0	12.4		9.3	26.6	7.8	
9.5	57.7	14.0		9.5	26.4	45.0		8.8	32.7	40.2		9.5	18.9	9.5		8.0	30.2	47.6	B
9.7	53 13.5	4.3		9.8	28.1	14.5		9.0	42.8	37.1		9.5	21.5	20.7		9.3	40.8	42.1	
8.8	13.9	37.8		10	28.4	35.2		10	46.8	8.3		9.8	31.6	4.8		9.8	41.2	36.7	
9.5	13.9	19.4		9.5	31.9	38.4		9.1	57.0	38.4		9.4	33.0	48.0		6.0	49.9	47.7	B
9.5	22.3	31.5		9.8	40.8	0.4		9.4	7 5.3	7.9		9.2	39.7	38.2		9.3	50.8	44.5	
9.8	23.1	23.6		9.0	49.6	51.6	CZ	6.0	14.5	25.4	B	9.8	52.3	19.9		9.3	53.3	26.9	
9.7	24.5	0.3		9.5	49.8	3.4		9.4	25.9	48.4		8.7	14 2.1	37.8	A	9.8	21 22.0	27.1	
9.4	24.7	27.9		10	56.0	13.5		9.5	27.0	23.0		9.5	4.9	55.4		7.0	33.1	34.0	B
8.3	28.2	54.8	A	9.6	57.1	14.6		9.5	29.0	11.2		9.3	26.3	21.6		9.4	44.3	45.7	
9.5	38.3	29.8		9.4	59.9	40.2		9.2	39.3	39.6		9.3	29.5	28.8	A	9.2	44.8	5.7	A
9.1	41.2	2.9	A	9.8	0 19.2	56.4		6.8	40.3	39.5	B	9.7	34.9	27.8		9.7	22 1.5	59.9	
8.7	54.3	31.4	A	8.5	19.6	52.3	CZ	9.1	57.2	27.0		10	40.5	21.1		9.2	2.0	28.2	A
9.2	55.4	2.8	A	9.3	24.5	47.0		9.0	8 3.6	26.1	A	6.8	44.0	34.8	A	9.6	5.4	17.6	
8.5	56.3	48.8	A	9.8	42.6	21.7		8.5	22.8	41.8	B	10	46.3	13.2		9.7	9.3	14.5	
9.0	54 1.8	31.3	A	9.8	59.8	4.0		9.0	26.9	18.3		9.3	47.3	54.2		10	26.7	46.1	
9.5	9.1	52.0		9.4	1 19.0	45.0		9.8	38.4	35.5		9.4	50.4	36.9		9.9	27.7	27.3	
8.0	20.7	27.0	A	9.3	21.9	36.4		8.0	55.6	31.4	A	9.7	15 0.2	59.9		9.9	35.2	50.2	
9.2	27.6	54.8	A	9.0	32.6	11.4	A	9.5	9 0.7	33.9		9.3	5.8	41.4		9.9	40.3	50.0	
9.3	30.7	13.5	A	9.7	44.3	35.0		8.7	2.3	44.2	A	9.8	16.1	11.8		8.7	44.9	51.5	CZ
9.5	36.1	20.5		10	44.6	10.5		9.8	4.5	52.9		9.3	16.5	5.4		9.8	46.6	0.2	
8.4	41.3	10.9	A	9.0	47.2	0.3	A	9.0	18.2	35.5	B	10	26.9	14.4		10	55.0	32.1	
9.3	43.2	25.1		9.0	2 5.6	12.8	A	9.3	24.4	5.3		10	32.4	45.0		9.4	58.6	36.0	A
9.0	54.1	19.8	A	8.9	12.9	34.9		9.8	24.5	24.3		9.7	34.2	13.1		9.7	23 14.5	7.3	
8.7	57.5	48.7	A	9.0	13.2	10.6	A	9.8	26.4	1.0		9.5	37.5	24.2		9.7	18.5	7.6	
9.5	58.2	57.1		9.0	26.6	56.0		9.2	31.5	10.4		10	37.9	55.0		9.4	37.4	55.0	
9.5	55 0.1	52.9		9.5	27.5	24.1		9.2	59.9	3.4		9.6	16 4.1	27.8		9.1	41.4	28.6	
9.3	10.3	22.2	A	9.1	35.2	50.9		10	10 2.2	2.9		9.1	20.4	45.1	A	6.0	41.9	43.3	A
10	14.2	1.7		9.4	37.7	18.8		9.5	2.8	22.4		9.0	24.6	52.2	A	9.0	45.7	16.0	
10	14.9	17.9		9.0	44.6	28.8		9.6	6.6	0.4		9.3	26.4	8.8		9.7	49.0	11.4	
9.0	16.7	59.7	A	9.4	58.6	32.7		9.0	9.7	35.6	A	9.4	26.8	25.9		9.2	55.3	11.9	

1901—1960					1961—2020					2021—2080					2081—2140					2141—2200				
	7h		—22°			7h		—22°			7h		—22°			7h		—22°			7h—8h		—22°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.8	24	6.1	1.5		8.8	32	25.7	5.7	A	9.7	40	33.0	43.1		9.0	49	50.4	38.0	A	10	58	38.7	44.4	
8.3		8.8	59.4	A	9.8		41.8	37.5		8.5		36.0	51.0	A	8.8		55.5	10.4	WZ	7.8		43.8	1.8	A
9.8		8.9	10.1		9.8		53.7	57.1		9.3		37.7	13.4		9.4		59.0	6.7		9.2		53.0	49.2	CZ
9.5		15.4	44.0		9.8		54.4	45.5		9.5		47.3	42.3		8.0	50	16.9	37.4	A	9.2		55.2	17.9	A
9.4		16.9	39.5		9.3		54.6	23.6		9.4		53.4	4.5		9.3		24.2	22.0		9.5	59	2.1	33.8	
9.2		27.6	35.3	A	9.5		55.1	21.3		9.4		53.7	7.0		9.7		28.7	7.1		9.5		3.9	55.0	
9.4		41.2	5.5		10	33	31.9	28.1		6.3		58.3	9.9	WZ	4.3		37.2	29.8	A	10		36.6	11.6	
9.5	25	13.5	32.6		10		33.5	49.1		9.8	41	7.3	55.6		9.1		43.1	26.4	A	9.0		50.3	45.8	
8.5		20.4	47.8	A	9.8		34.3	19.4		9.8		17.2	12.7		9.3		52.2	30.0	A	9.4		51.3	27.5	
9.2		39.3	14.5		9.5		37.4	42.0		9.6		24.5	15.4		8.8		56.0	4.4	WZ	9.3		58.2	26.9	
10		40.1	23.7		8.0		44.7	56.7	A	9.5		39.8	45.4		9.8	51	8.5	41.8		10	0	13.5	35.8	
8.3		48.2	36.9	A	9.7		55.9	11.1		9.7	42	2.3	8.3		9.6		9.4	37.4		8.9		19.6	35.9	A
9.8		53.6	28.6		9.5	34	9.7	54.1		9.3		16.5	18.7		9.8		12.8	24.8		8.7		20.1	22.1	A
10		57.2	4.8		9.1		23.0	3.6	A	9.6		20.0	33.6		9.8		20.5	22.9		10		34.5	10.8	
9.4		58.4	10.3		9.7		23.9	7.6		9.5		35.2	23.5		9.5		29.7	20.6		9.3		34.5	3.0	A
9.4	26	2.6	28.8		10		30.2	6.8		9.7		37.7	46.5		9.0		50.0	21.9	A	9.7		39.8	25.2	
8.7		10.5	31.4	A	9.6		30.4	22.4		9.5		58.0	3.9		9.1		55.3	34.8	A	10		44.6	16.2	
9.7		13.2	4.3		8.9		40.5	5.0	A	9.8		58.9	29.8		9.8	52	1.7	50.0		9.5	1	0.1	50.0	
9.3		30.1	29.6	A	10		46.1	38.7		8.3	43	8.2	12.0	A	8.7		1.9	37.1	A	9.7		0.2	16.2	
10		31.6	36.7		9.5		52.6	22.6		9.4		16.4	31.1		9.3		19.7	48.3		8.6		13.3	29.7	A
9.3		33.6	38.7	A	9.6		56.0	19.2		9.3		30.1	0.1		10		35.9	38.0		9.1		39.9	14.7	
9.8		48.4	28.3		10	35	5.3	39.4		10		44.0	53.4		9.1		40.3	34.1	A	9.0		43.0	57.6	A
9.6		49.5	31.7		9.9		11.1	2.1		9.1		46.8	28.3		9.8		48.8	46.0		9.5		43.8	59.2	
9.8		55.3	52.0		9.8		11.3	9.6		9.5		48.9	47.4		6.2		52.4	55.3	B	9.5	2	35.4	55.8	
9.5		59.9	37.2		10		24.7	53.1		9.1		58.4	47.6	A	9.9		58.3	32.8		9.3		46.1	23.5	
9.6	27	3.2	44.6		7.7		33.2	4.0	B	9.5	44	3.8	16.4		9.6	53	2.7	29.0		9.5		47.0	29.2	
9.8		4.7	52.9		9.8		43.5	30.9		9.3		18.4	32.0		9.6		9.7	29.0	A	9.1		49.7	46.5	
9.1		17.4	57.0	A	9.5		48.4	1.4		8.9		20.6	9.1		9.2		34.6	29.0	A	9.4		52.4	10.4	
9.7		28.9	23.7		9.4	36	19.2	3.9	A	9.1		31.8	48.7	A	9.5		40.1	37.9		9.5	3	3.4	55.0	
9.9		35.2	4.9		9.8		28.6	36.3		10		57.7	48.5		7.8		50.5	57.6	A	10		12.6	45.5	
9.4		45.7	41.1		9.1		39.8	23.9	WZ	9.5		59.1	50.0		9.9		56.5	46.0		9.1		26.7	9.7	
9.4		54.3	22.2		9.5		45.2	21.4		8.5	45	2.5	40.2	A	10	54	4.8	38.1		8.5		28.0	23.5	B
9.5	28	22.1	51.9		9.5	37	1.9	2.5		9.0		4.2	9.1	A	9.8		20.8	56.7		7.3		57.9	6.4	B
9.5		24.8	20.5		9.0		3.0	52.1	B	9.0		7.4	52.2	A	9.1		22.7	28.1	A	9.5	4	4.0	37.9	
9.5		27.1	26.6		9.0		3.9	47.9	B	9.0		24.6	41.4	A	9.5		23.5	43.8		9.2		5.3	59.3	A
8.8		31.1	53.4	A	10		13.2	51.8		9.5		33.9	36.0		9.9		24.9	23.9		8.7		6.1	27.1	B
9.3		31.6	56.2		9.3		15.0	6.3		9.8	46	1.0	10.5		10		30.4	2.0		9.1		6.1	25.3	B
8.4		34.6	27.7	WZ	9.6		28.8	11.1		9.6		13.9	56.0		9.3		45.2	1.8		9.1		27.9	57.9	A
9.3		45.2	23.1		9.5		41.5	33.9		8.7		21.3	19.1	A	9.5		45.8	6.2		8.7		36.2	28.0	
9.6		46.5	45.2		9.6		47.5	58.7		9.7		36.1	2.0		9.2		50.3	4.8		9.8		54.1	24.0	
9.5		47.7	48.5		9.2		52.4	27.3		9.8		51.6	22.7		9.0	55	24.6	50.1	CZ	10	5	4.5	59.3	
9.5		50.9	19.2		9.2	38	16.3	0.0		9.1		55.7	45.5	A	9.6		29.1	30.4		9.1		13.6	43.5	
9.6		57.4	14.8		9.8		16.9	49.1		9.5	47	2.5	43.1		9.7		34.1	31.0		9.5		17.0	19.5	
9.9	29	13.2	12.5		9.4		25.5	30.6		9.5		12.0	57.1		9.5		56.6	50.0		9.5		31.2	46.5	
9.0		26.7	31.3	A	9.5		49.5	30.4		7.4		26.4	56.5	A	9.6	56	9.6	7.5		9.7		38.1	14.1	
9.4		27.5	12.1		9.0		54.5	17.2		7.5		27.0	48.4	B	9.5		11.9	59.6		9.5	6	13.4	5.4	
9.5		54.4	57.6		9.2		55.5	50.6		9.8		41.9	41.2		9.5		30.5	9.0		9.5		28.3	36.2	
9.6	30	9.0	44.0		8.7	39	2.3	13.8		9.5		45.9	8.3		9.1		34.5	17.0		9.3		30.9	34.9	
9.4		11.3	15.2		10		3.2	4.1		9.7		46.0	4.9		9.8		37.7	31.5		9.2		48.0	12.8	
9.7		11.4	47.5		9.8		6.3	23.7		9.4		52.8	8.8		10		47.9	22.4		9.8		49.1	47.2	
9.5		17.9	52.7		9.8		9.6	11.9		9.4	48	4.9	54.2		9.8		51.9	26.0		9.4		54.2	46.6	
9.6		26.2	7.5		9.6		34.8	45.5		9.8		40.8	9.4		9.1	57	2.7	54.8		9.4		54.9	16.1	
9.1		26.9	58.7	A	9.0		40.4	40.2		9.2		46.3	29.7		9.4		17.6	20.1	A	9.3		56.8	18.2	
9.5	31	7.5	28.8		8.9		48.5	15.7		9.0	49	2.4	37.2		9.5		21.8	15.2		9.9	7	24.1	17.6	
9.8		21.7	34.4		8.2		51.1	54.6	B	9.0		5.5	44.1		8.6		33.8	17.2	A	9.3		40.0	24.8	
9.3		28.5	18.4		7.7		54.0	47.0	B	9.6		10.8	5.7		9.8		39.1	10.1		9.4		45.5	15.2	
9.5		29.8	47.1		9.7	40	17.3	42.0		9.5		11.3	52.3		9.3		58.0	7.7		9.1	8	1.4	42.5	
9.9		32.6	16.7		9.4		29.2	36.0		9.4		16.5	5.7		9.1	58	17.3	24.6	A	9.4		11.2	3.4	
8.6		35.6	17.7	A	9.8		29.7	52.2		9.8		44.8	9.4		9.5		25.0	4.1		9.8		28.7	19.9	
10		50.0	26.5		9.7		30.3	42.5		9.5		47.4	59.2	A	9.8		26.4	25.1		9.6		44.8	16.5	

2201—2260					2261—2320					2321—2380					2381—2440					2441—2500				
	8h		—22°			8h		—22°			8h		—22°			8h		—22°			8h—9h		—22°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.2	8	52.9	6.7		9.8	18	36.0	57.5		9.8	27	46.5	2.1		9.4	38	57.4	28.3		8.5	49	17.4	50.0	A
9.4	9	15.1	43.0		6.2		36.2	41.0		9.8	28	5.2	14.6		9.5	39	7.0	21.3		9.2		22.5	17.6	A
9.8		25.0	40.2		9.3		37.0	25.0		9.8		14.5	50.3		9.1		17.3	12.9	A	9.8		40.6	2.5	
9.2		35.8	41.6		9.8		55.1	37.4		9.1		24.7	54.6	A	9.8		24.9	14.8		9.4		51.4	48.5	
10		38.6	37.1		9.0	19	33.6	14.5		9.1		44.8	48.3	A	9.6		25.1	3.7		9.7		55.5	14.3	
9.7		40.5	45.2		9.3		41.1	7.3		9.0	29	0.3	57.6	A	9.0		25.9	12.9	A	9.2	50	4.0	55.0	B
9.1		48.8	1.1		9.5		41.2	18.8		10		47.8	23.7		8.8		26.1	11.4	A	9.1		8.0	56.1	A
9.8		53.8	20.4		8.8		53.5	35.8		9.7		55.1	8.6		9.5		27.4	9.7		9.3		10.3	35.8	
9.7	10	31.1	17.2		9.5	20	2.1	13.0		9.0	30	6.6	33.3		9.0		37.6	11.4	A	9.5		18.9	39.0	
10		32.6	20.2		10		2.7	26.7		9.5		25.1	55.9		9.1	40	1.2	14.5		9.6		39.8	30.7	
9.7		39.5	45.6		9.0		14.8	37.2		9.8		25.8	52.3		9.2		2.8	27.7		9.7		58.3	5.7	
9.4		42.2	48.9		9.1		22.0	41.4		9.3		51.2	39.6		9.0		6.3	27.2		9.4		58.5	50.3	
10		49.0	14.2		9.5		24.0	23.7		8.2		55.9	13.7		9.9		9.1	23.8		9.7	51	48.5	57.5	
9.7		50.2	12.1		9.8		28.2	32.5		9.5	31	17.5	11.4		9.5		14.5	15.1		9.5		50.3	58.3	
9.3	11	5.0	27.3		9.6		33.4	25.0		9.8		34.0	53.8		8.2		14.8	9.6	A	9.3	52	0.6	2.7	
9.6		8.9	14.7		7.7		41.1	46.5	A	8.7		35.1	34.1		10		23.7	31.9		9.3		1.6	10.0	
9.1		22.4	13.8		9.5		43.5	33.0		8.7		48.9	0.6	A	9.6		32.0	33.7		8.6		7.4	16.6	A
9.2		28.8	14.5		7.0		51.4	57.4	A	9.4		52.2	1.0		9.8		47.8	9.8		8.5		8.3	23.0	A
9.5		35.8	25.4		9.8	21	37.1	13.9		9.7	32	19.1	9.0		9.4	41	0.5	29.5		9.7		15.1	8.8	
9.8		38.3	9.1		9.3		43.8	16.9		9.3		24.8	51.9		9.6		3.5	18.8		9.4		35.7	43.2	
8.2		53.4	47.1	A	9.5		46.5	19.0		9.7		28.3	3.7		9.5		27.9	9.9		9.1		40.3	27.9	
9.2	12	14.0	22.7	A	9.5		54.0	44.2		9.5		38.9	30.8		9.1		32.2	53.0		9.2		56.5	56.5	A
9.5		16.1	19.6		9.0		54.9	29.8		9.1		41.0	53.8	CZ	8.5		56.3	36.4		9.1	53	0.6	8.6	
9.5		25.8	6.1		10		55.6	46.4		9.8		42.9	37.0		9.5		57.0	31.0		7.5		3.6	36.3	A
9.5		30.4	44.2		9.4		57.0	52.0		5.3		47.1	9.0	B	9.5	42	2.8	2.7		9.1		7.8	58.0	A
9.5		46.9	11.5		7.0	22	15.8	35.2	A	9.5		50.9	36.8		8.8		24.1	38.6		10		20.7	54.2	
9.4		53.3	34.9		8.5		18.6	11.4		9.5	33	13.3	42.8		8.2		27.7	20.4	A	6.8		26.5	7.7	A
9.1	13	3.4	25.2	A	9.4		22.3	22.1		9.5		28.8	58.4		9.3		46.4	14.1		9.5		36.3	40.1	
9.0		14.0	55.4		9.6		22.7	2.5		9.3		30.2	10.0	A	8.0	43	2.2	4.1		9.5	54	2.5	0.7	
9.5		44.9	43.5		9.8		26.2	54.3		8.2		42.1	41.0	A	8.5		12.1	13.1	A	9.5		19.1	46.3	
8.0		54.0	53.8	B	9.4		35.2	3.2		9.1		42.6	27.4		9.5		13.6	52.0		9.2		23.6	20.4	
9.0	14	6.8	20.7		9.5		50.8	34.3		9.5		59.0	55.4		9.3		22.9	11.9		9.5	55	8.2	12.0	
6.3		8.9	27.7		9.8		59.0	49.8		9.2	34	13.4	5.5	A	9.4		37.8	0.4		9.1		10.2	36.9	
9.6		38.1	57.8		9.5	23	7.7	52.3		9.0		20.5	34.3		9.8		54.6	59.0		9.5		33.8	12.7	
9.8		41.4	28.5		9.4		7.8	31.7		9.8		37.2	24.0		9.5	44	12.3	14.4		9.6		48.0	51.8	
9.8		44.3	14.5		9.5		15.1	44.3		9.8		38.8	14.2		9.4		18.0	28.5		9.5		58.8	0.4	
9.8		45.9	30.5		9.1		20.8	34.9	A	9.4		39.1	55.5	CZ	8.5		20.2	41.2	A	9.5	56	4.8	21.0	
9.5		49.4	55.6		9.6		21.8	3.4		9.5		55.6	6.3		9.5		42.6	45.9		8.6		19.1	36.8	
9.8	15	13.6	57.6		9.5		33.5	9.1		9.5	35	0.3	29.5		8.3		43.7	29.9	A	7.5		59.7	25.7	
9.3		16.5	52.0		9.2	24	1.7	18.1	A	9.4		5.6	19.8	A	9.0		44.2	20.8		9.0	57	1.7	52.4	
9.5		31.0	32.5		9.6		33.1	1.7		9.1		28.2	42.5		9.7		52.7	46.1		9.7		8.0	48.7	
9.8		44.4	1.4		9.5		45.0	25.8		9.5		37.9	19.1		9.6		58.7	17.3		8.9		17.9	56.8	CZ
8.6		51.6	57.4	CZ	9.8		51.9	50.1		9.2		44.8	8.0		9.9	45	9.9	32.3		9.6		23.5	52.3	
9.5		57.5	14.7		9.8	25	11.1	21.9		9.5		47.0	15.7		9.7		14.5	48.6		9.7		27.8	10.9	
9.5	16	0.1	38.4		9.7		15.9	30.2	A	9.2		50.3	21.1	A	10		39.9	31.2		9.0		29.1	47.7	A
9.9		39.9	27.4		9.7		17.0	32.8		9.4		57.6	19.8		9.9		57.7	13.4		9.7		33.3	24.8	
9.6		45.9	17.4		9.4		24.2	40.4	A	9.5	36	10.1	54.4		10	46	18.3	41.5		9.6		51.8	12.0	
10		50.4	18.9		9.6	26	1.6	10.1		9.3		27.9	15.6	A	9.2		29.0	46.2		9.5		55.7	9.6	
9.0		54.2	0.6		9.7		7.2	7.8		9.5		35.2	1.9		9.1		34.1	59.1		9.8		58.3	9.1	
10	17	1.1	39.6		10		12.3	56.2		9.5	37	14.6	30.9		9.5		55.8	8.4		9.6	58	9.0	6.5	
9.1		2.2	22.5		9.8		14.1	54.2		9.2		43.9	9.6		8.0		58.4	26.7	A	10		38.6	9.9	
9.8		19.9	52.5		8.4		22.3	19.4		9.4		56.7	26.6		9.1	47	3.2	15.7	A	8.0		54.9	23.6	A
9.5		40.0	58.8		9.7		23.4	27.0		9.4		57.7	54.9		9.1		4.5	23.3		9.1	59	0.4	56.4	
9.3		55.9	16.2		9.0		33.0	43.6	A	9.4	38	4.1	58.6	A	8.2		11.9	29.6	A	9.4		18.7	26.5	
9.5	18	3.7	57.5		9.0		33.5	23.2		9.4		7.9	1.2		9.1		23.6	57.2	CZ	9.6		33.9	52.8	
9.0		5.8	25.1		9.2	27	5.9	42.6		9.2		10.2	33.2		9.5		26.0	24.0		9.5		37.4	57.5	
9.9		9.1	17.3		7.7		29.4	52.6	B	9.6		11.8	12.4		9.5		31.5	12.3		8.5		50.9	20.5	
9.8		14.5	18.7		9.1		31.1	23.2		9.7		12.7	57.9		9.5		54.5	5.0		8.3	0	24.4	44.6	CZ
9.3		15.5	14.6		9.5		31.5	37.8		9.4		22.2	11.0		9.1		59.8	24.0	A	8.8	1	17.9	48.6	A
9.8		19.9	32.0		9.8		44.9	11.0		8.6		39.3	50.2	A	7.2	48	5.1	58.7	A	9.8		25.6	36.6	

2501—2560					2561—2620					2621—2680					2681—2740					2741—2800				
	9h		−22°			9h		−22°			9h		−22°			9h		−22°			9h		−22°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.8	1	34.2	27.8		9.0	12	4.8	31.3	A	9.5	22	35.5	36.3		8.8	33	37.7	6.3	A	8.8	44	33.1	16.8	A
8.3		53.0	45.0	A	9.8		18.0	12.9		9.7	23	8.4	5.5		8.2		55.6	41.7	A	9.0		46.2	43.3	
8.0		55.6	28.7	A	9.7		28.2	26.1		6.5		15.4	42.6	A	9.5	34	22.2	38.8		9.4		50.4	27.8	
9.7	2	1.4	7.8		9.2		28.7	20.5		9.6	24	4.4	40.0		5.0		40.5	56.0	B	9.8	45	4.0	52.3	
9.1		50.8	56.9	A	9.8		32.9	23.8		9.1		9.2	2.7		9.7		46.6	46.8		9.5		6.7	31.8	
8.5		58.9	55.7	B	9.8		35.5	27.1		9.6		9.9	46.3		9.0	35	12.3	34.8	A	9.1		16.9	0.1	
7.2	3	7.7	0.8	A	9.4		36.4	32.5		8.0		14.3	52.4	A	9.6		25.8	16.3		9.5		26.7	43.1	
9.8		16.5	23.3		9.3		36.4	45.9		9.0		38.3	51.9	A	10		32.4	6.2		9.2	46	4.1	35.5	
9.8		17.2	46.8		7.9		48.9	47.5		7.3		54.2	52.3	A	9.1		52.1	45.8		9.7		25.5	8.5	
9.5		37.6	37.1		10	13	3.6	6.2		9.5	25	3.5	45.4		9.2		55.6	13.5		7.8		34.1	59.5	A
9.4		42.1	28.0		9.5		15.1	30.0		9.7		15.8	52.7		9.1	36	4.1	38.7	A	8.8		41.5	5.2	
6.3		53.6	35.3	A	8.5		26.7	21.1		8.0		20.1	41.2	A	9.4		5.0	27.4		9.1		44.9	40.2	
8.7		57.8	42.0	A	9.4		39.4	48.5		9.2		21.0	13.6		7.8		12.0	18.1	WZ	8.5		52.1	15.7	
9.9	4	5.2	45.5		7.5		44.3	51.7	B	9.3		23.3	4.8		8.9		17.2	38.5	A	9.1		56.9	9.1	
8.0		11.3	30.6	A	8.3		51.8	47.7	B	9.1		32.1	42.3	A	9.1		28.1	37.4	A	9.5	47	24.3	37.3	
9.5		16.2	45.1		9.8		53.4	14.1		9.6		37.9	26.2		9.8		38.0	16.9		8.5		44.4	37.8	A
9.2		20.2	52.7		9.8		58.2	41.6		9.7		48.3	8.5		9.8		49.9	18.1		9.8	48	8.3	47.6	
9.4		57.9	38.0		9.8	14	1.2	37.8		9.8		50.3	37.8		8.4	37	10.9	6.7		9.4		12.0	39.0	
9.8	5	7.6	14.5		9.9		4.4	5.0		8.3		58.9	16.4		9.8		16.5	9.8		7.8		21.8	48.9	A
9.6		10.9	16.1		9.9		5.0	3.3		9.7	26	6.0	7.6		9.5		31.3	22.0		10		25.3	50.1	
9.0		35.3	48.1		9.5		15.4	3.7		9.1		21.0	30.3	A	9.6		32.4	34.1		9.1		35.5	30.6	
9.5		39.0	35.2		9.0	15	2.1	53.3		9.2		31.3	0.2		9.5		33.0	48.5		9.7		53.4	1.2	
9.5		44.7	12.7		9.7		13.1	7.2		9.7		36.0	4.6		9.4		38.6	53.7		9.7	49	3.3	37.1	
9.4		45.3	10.7		9.5		13.4	31.9		9.4		41.2	58.8		9.0		40.1	32.8		8.9		12.1	11.0	A
9.1		48.0	0.6	A	9.5		27.6	38.7		6.1		50.8	13.0	B	6.8		56.7	5.0	A	9.2		20.0	28.6	
9.5	6	17.2	51.4		9.7		35.3	50.8		9.1		53.7	30.8		7.7		58.0	41.6	A	9.3		50.1	49.6	
9.4		18.1	45.5		8.7		48.6	43.0		9.1		57.5	30.0	A	7.8	38	1.4	55.0	A	9.7		52.7	3.8	
9.5		54.5	28.0		9.3		55.4	5.9		9.7	27	33.2	8.9		8.0		18.5	49.1	B	9.1		59.2	43.9	
9.8		54.9	50.9		8.5		58.2	23.5		9.7		35.0	18.5		9.8		44.3	7.1		9.5		59.4	38.0	
7.0	7	15.8	16.1	B	9.0	16	0.9	9.0		9.0	28	5.9	23.0	A	9.7	39	8.2	19.6		8.5	50	0.3	59.5	A
8.8		17.2	57.6	CZ	8.9		27.9	15.6		9.5		22.3	48.4		9.5		44.0	36.3		9.7		18.0	10.9	
9.9		18.3	41.8		9.5		38.7	32.0		9.2		27.4	27.2		9.2		46.6	1.6	A	9.4		26.6	54.4	
9.0		26.4	54.0		8.8		40.0	22.8		9.0		30.4	44.2		9.1		56.1	25.5		9.6		34.0	15.5	
9.0		29.8	5.5		9.6		45.6	7.8		8.7		33.4	23.2	A	9.6	40	7.5	37.9		10		50.8	38.8	
9.8		41.4	21.6		8.8		50.3	28.2		9.1		41.1	13.0		9.1		11.9	21.6		9.2		54.2	13.3	A
9.2		46.7	19.0		9.9		56.0	41.8		8.9		41.6	48.1	CZ	9.5		59.2	6.5		10		57.4	35.7	
9.2		47.8	34.2		9.0	17	50.6	16.3		9.0		41.8	30.8	A	9.4	41	0.9	26.6		9.8	51	0.3	42.0	
9.6		53.7	6.4		8.7		52.2	17.5		7.5		47.9	2.2	A	9.5		1.4	40.5		9.8		19.5	22.5	
9.8	8	17.1	17.2		8.8		57.9	6.0	A	8.7		49.8	32.6	A	9.5		4.5	30.0		9.3		33.6	47.1	
9.6		18.0	21.1		9.3	18	8.2	45.9		9.8	29	15.5	5.6		8.8		23.8	51.2		9.1		43.7	27.2	
9.8		21.0	22.5		9.2		20.3	50.2		9.5		30.3	26.1		9.5		26.0	34.4		9.6		45.1	16.3	
7.7		25.9	11.9	A	9.8		26.0	46.0		9.5		46.3	36.5		9.0		39.8	3.7		9.8		53.9	58.2	
9.3		46.9	25.3		9.3		26.7	47.4		9.1		48.5	1.6	A	9.1		41.4	8.8		9.5	52	1.7	43.6	
7.0	9	7.5	53.6	A	9.0		37.4	59.8	A	9.3	30	2.5	18.3		9.0		42.6	9.8		9.8		9.2	10.3	
9.4		12.2	52.3		9.7		56.7	48.7		9.5		8.7	8.5		8.1		53.8	0.2	B	9.4		11.6	15.2	
9.5		12.3	9.0		9.6	19	5.5	47.3		9.7		49.3	33.8		9.5		56.5	22.8		9.1		32.3	5.5	
9.1		21.4	21.0		8.2		11.8	11.5	A	9.5		54.5	8.4		9.0	42	11.7	58.5		9.8		39.3	25.7	
9.4		26.7	52.9		9.0		36.5	2.4	A	9.0	31	0.7	35.0	WZ	9.0		27.1	42.6		9.0		45.4	55.0	CZ
9.5		39.8	26.1		8.8		44.7	28.0		9.3		18.5	5.0		9.6		32.8	19.8		9.0		46.2	25.7	WZ
7.7		46.9	31.7	A	9.1		46.5	7.2	A	9.7	32	5.8	7.0		9.0		40.4	42.6	WZ	9.7		57.2	5.2	
9.5	10	31.7	37.7		8.9	20	9.4	20.3		8.8		17.1	18.5	A	8.9		59.3	58.7		9.8	53	4.3	4.0	
9.0		32.1	19.3	A	9.4		42.1	20.0		9.3		25.0	26.4		9.7	43	14.8	3.4		8.5		4.3	38.7	
9.5		54.1	56.9		9.0		48.4	42.0	A	7.3		28.6	26.6	A	9.8		15.1	9.3		9.7		6.8	47.4	
9.1	11	5.2	22.7	A	9.5	21	2.4	0.9		9.8		47.4	1.0		9.4		36.5	57.8		9.5		9.5	37.3	
9.5		6.6	45.3		8.9		10.8	8.0	A	9.7		50.6	28.9		9.9		56.7	4.8		9.8		20.0	24.1	
8.5		13.7	19.1	A	9.3		13.0	33.7		9.1		59.7	42.2	A	9.4		59.9	42.0		8.9		25.0	23.1	
8.3		32.9	22.7	A	9.4		45.1	19.7		9.4	33	5.6	43.5		9.8	44	1.4	55.8		9.1		25.4	45.0	
8.0		36.8	3.6	B	9.7	22	3.8	59.1		9.1		17.6	32.3		9.7		17.0	0.4		9.6		48.7	34.5	
9.3		39.1	55.4		10		10.9	38.1		9.5		29.4	12.1		6.6		22.1	20.4	A	9.3		54.9	10.4	
9.4	12	0.5	12.6		9.5		26.9	35.7		9.5		33.6	51.7		9.2		30.4	38.7		9.8	54	14.8	54.8	

2739: sehr roth

2801—2860					2861—2920					2921—2980					2981—3040					3041—3100				
	9h—10h		—22°			10h		—22°			10h		—22°			10h		—22°			10h—11h		—22°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.7	54	19.9	4.0		9.0	5	15.3	30.6	WZ	9.5	20	21.1	7.0		9.5	34	3.1	16.0		9.8	48	49.8	12.1	
9.5		21.6	42.8		9.6		21.0	8.3		9.5		36.6	18.7		9.5		5.2	31.1		8.5	49	5.2	6.6	B
7.8		27.3	27.1	A	9.8		32.2	34.5		8.6		38.2	27.5	WZ	9.5		23.7	51.4		9.7		23.2	49.3	
7.4		30.8	4.0	A	9.8		40.3	30.9		9.5		42.4	18.9		9.4		30.7	9.3		9.8		31.1	27.4	
9.8		45.9	7.8		9.1		43.9	53.9		8.7	21	42.4	4.5		9.0		38.4	39.1	WZ	9.8		31.6	46.3	
9.4		58.1	15.8		9.5		55.1	31.6		9.0	22	10.3	35.5	WZ	9.5	35	42.4	47.2		8.9		52.6	37.6	A
8.5	55	0.4	53.8	CZ	8.7		56.7	34.3		9.1		35.4	56.8	A	8.6		48.7	9.6	A	10	51	42.4	12.4	
9.3		28.8	22.7		9.2	6	8.8	28.5		9.8	23	34.9	21.3		7.0		56.1	47.4	A	9.2		45.8	6.3	
9.8	56	7.0	35.9		7.5	7	3.6	21.7	A	10		38.6	12.9		9.5	36	12.2	31.3		7.8	52	3.5	28.4	WC
9.8		52.9	43.0		9.3		13.2	20.6		8.8		55.3	58.9	WZ	9.2		23.2	4.2		9.0		14.0	47.0	
9.0	57	6.7	29.1		10		16.6	56.1		9.5	24	28.8	26.7		9.7		29.4	1.6		9.5		40.6	24.5	
9.5		12.3	1.0		9.3		45.0	32.1		9.0		42.3	56.3		8.5		34.8	22.4	A	9.8		42.9	31.6	
9.0		30.1	35.0		9.0		49.6	24.5		9.3		49.7	58.8		9.1		42.6	35.3		9.4	53	15.8	33.2	
9.7		30.2	3.3		8.8		52.8	6.7	A	9.8		50.7	23.9		8.5	37	7.3	12.3	A	8.2		24.2	38.7	WZ
9.8		47.1	3.4		9.7		56.5	1.2		9.5		52.1	27.2		9.8		20.7	24.5		9.6		27.0	3.2	
9.0		51.4	11.9		9.8	8	31.7	52.9		9.1		56.1	3.1		9.4		33.3	8.8		9.3		28.3	1.7	
9.0	58	2.3	14.1	A	9.1		32.5	11.9		9.0		57.3	34.7	WZ	9.0		45.3	11.7	B	9.8		50.7	1.7	
8.9		17.6	16.8	A	9.5		41.6	52.7		9.4	25	11.2	58.4		9.8		59.9	49.5		9.7		56.9	22.4	
9.4		19.7	24.4		9.8	9	10.0	0.1		8.0		32.3	51.7	A	9.2	38	28.9	2.9		8.4	54	22.1	38.7	A
9.5		27.5	31.3		9.7		10.7	2.1		9.4		33.4	38.4		9.8		56.6	57.8		9.5		25.3	32.9	
9.3		33.1	26.2		9.0		40.8	37.4		9.8		37.8	15.1		7.3	39	10.4	40.2	A	9.7		59.5	15.4	
8.5		36.1	0.3		9.5		58.6	13.0		9.1		40.9	52.2	CZ	10		11.4	56.4		9.0	55	11.7	37.8	A
9.8		39.5	14.4		9.5	10	5.9	34.3		10	26	6.4	14.0		9.1		22.9	7.5		9.7		19.8	14.7	
9.3	59	1.8	18.5		9.6		23.2	12.8		9.8		11.1	35.9		9.9		31.2	5.6		8.8		26.5	18.6	
9.9		6.3	59.2		9.4		28.9	29.4		9.8	27	0.2	0.6		9.4		48.4	12.4		9.8		36.4	29.3	
9.8		8.1	46.0		9.1		47.4	59.1		5.5		8.1	59.8	A	9.2	40	18.5	12.0		8.7		38.3	50.0	A
9.4		12.0	11.9		9.4		55.8	38.8		9.5		13.5	1.6		9.8		37.6	44.9		9.5		42.4	28.4	
9.7		14.7	19.5		9.4	11	8.1	49.8		10		16.2	21.4		9.8		46.8	6.8		9.7		52.2	7.7	
9.8		53.2	19.3		8.3		32.7	1.7	A	9.0		35.3	51.1	A	9.1	41	3.3	42.7		9.5	56	22.2	23.0	
7.3		54.6	25.8	A	9.4		50.3	28.4		9.3		43.1	28.7		9.6		12.9	0.5		9.0		33.8	2.1	
9.2		57.9	14.7		7.5	12	0.4	27.1	A	9.5	28	3.9	44.1		8.8	42	7.7	11.5		9.0		53.1	7.9	A
8.5	0	12.1	50.4	A	8.5		15.3	26.2	A	6.7		4.9	25.6	A	9.2		19.0	8.2		9.4	57	22.0	43.1	
9.8		29.3	42.2		9.5		55.2	13.0		9.0		8.8	44.5	A	8.5		21.0	19.8	WZ	9.4		26.9	21.7	
9.7		33.6	36.1		7.4		59.3	14.1	A	9.0		17.5	31.4	A	9.8	43	52.0	0.8		8.0		33.2	0.1	A
9.7		43.5	48.9		9.1		59.7	0.2		9.8		19.3	12.4		9.5	44	7.5	2.4		9.7		40.4	12.4	
9.5	1	1.5	28.1		7.5	13	22.4	22.2	A	9.7		44.2	42.1		8.6		22.3	55.7	WZ	9.1	58	35.8	21.0	
9.5		11.1	45.5		9.0		26.9	25.8	A	9.4		50.6	53.8		9.5		28.3	27.6		9.8		41.3	16.7	
10		23.4	43.0		9.5		39.8	33.2		10	29	5.5	25.8		9.5		44.5	50.9		9.4		59.4	19.9	
9.8		38.3	32.1		7.5		43.5	54.7	CZ	9.2		46.1	1.1		9.3	45	5.8	30.5		9.1	59	2.7	26.6	
9.7		41.1	37.1		9.8	14	9.0	11.7		9.8	30	24.9	36.5		9.8		10.7	2.0		7.8		46.4	46.3	B
9.5		46.2	56.7		9.1		12.8	5.8	A	9.5		29.2	49.0		9.0		21.8	26.5	WZ	8.7	0	21.9	37.3	WZ
9.9		57.8	12.5		9.4		18.7	28.6		9.5		36.0	32.0		9.5		23.5	5.6		10		45.4	5.6	
9.7	2	17.2	8.2		9.7		23.7	15.9		7.8		41.4	37.8	B	9.0		32.4	24.7		9.4		55.5	38.9	
8.0		22.6	51.3	A	6.5		39.4	58.9	B	9.8		45.9	14.7		9.4	46	6.2	24.4		8.8		58.1	3.0	
8.8		23.2	46.6	CZ	9.2		42.5	10.2	A	9.2	31	8.3	31.3		9.2		12.9	49.3		9.3	1	22.9	5.5	
10	3	3.3	40.9		9.6		56.7	59.4		9.7		10.3	35.8		9.8		26.1	44.1		9.5		50.8	18.5	
9.3		14.0	24.3		9.7	15	3.4	50.1		9.7		10.7	42.9		9.7		27.4	39.8		9.6		58.0	27.5	
9.4		18.9	32.6		9.2		12.6	36.7	WZ	9.8		35.5	22.4		8.9		42.1	35.2	A	9.3	2	11.9	55.0	
8.8		21.4	56.5	A	9.2	16	21.7	6.1	A	9.9		52.3	23.0		9.0		58.8	57.4		8.8		31.1	46.2	A
8.9		31.4	59.0	A	7.8		46.9	44.0	B	9.5	32	0.2	39.8		9.5	47	3.4	46.6		8.6		58.7	3.4	A
9.3		38.2	4.3		9.5		53.7	51.9		9.7		23.7	20.4		7.8		4.5	24.4	A	9.1		59.9	34.0	WZ
9.4		40.9	22.8		9.5		54.6	24.8		9.8		23.9	13.4		9.8		19.1	33.3		9.8	3	16.7	15.5	
9.3		45.5	25.0		9.3	17	37.4	5.5		8.9		32.0	1.0	A	10		27.3	16.0		9.2		24.6	0.4	
9.0		55.0	21.0		8.8	18	25.3	48.2	CZ	9.0		46.9	55.5	CZ	9.5		29.6	31.3		10		46.7	7.2	
9.8	4	4.7	15.1		9.5		35.1	25.9		9.2		48.4	41.0	WZ	9.8		50.2	7.4		4.8	4	32.5	1.9	L
10		24.9	21.5		9.8	19	1.0	24.8		9.1		59.1	41.8	WZ	9.3		56.8	2.9		9.3		37.6	39.5	
9.6		27.6	42.9		9.8		18.2	19.4		8.0	33	4.9	52.1	B	8.3	48	5.1	9.5	A	9.5	6	33.4	44.5	
9.0		34.4	25.7		9.6		22.2	13.3		10		40.6	11.0		9.8		8.3	1.9		7.3		33.6	12.4	B
9.8		45.8	33.6		9.0		29.3	40.5	WZ	9.4		48.1	18.0		8.3		22.7	15.8	A	9.5		37.8	29.4	
9.4	5	9.8	33.0		9.5	20	2.4	36.9		8.7		52.5	2.7	A	9.1		26.2	25.7	B	9.4	7	5.0	14.4	

3101—3160

	11h	—22°	
m	m s	′	
8.5	7 39.2	51.9	CZ
8.9	42.5	18.2	
9.4	8 17.9	9.6	
7.1	34.5	7.4	B
10	49.9	19.2	
9.5	9 14.4	10.8	
9.2	54.0	47.1	
9.8	10 6.5	48.3	
9.6	59.2	13.6	
9.5	11 1.9	0.0	
8.9	45.2	19.5	A
9.8	12 4.6	18.3	
9.8	16.5	28.3	
9.7	59.4	10.1	
8.3	13 8.8	56.1	A
9.8	14.1	11.9	
10	20.2	8.6	
9.2	25.5	33.6	A
9.4	35.8	14.2	
9.8	41.0	22.7	
8.0	42.6	25.1	A
9.2	14 39.6	38.1	WZ
9.8	40.3	12.0	
9.0	50.7	0.8	A
9.7	53.8	6.4	
8.9	15 7.6	6.0	A
8.0	24.9	55.8	A
9.2	43.0	2.6	A
7.3	16 7.2	54.5	B
9.0	18.6	45.9	CZ
10	24.7	3.7	
9.6	53.4	25.6	
9.5	17 0.2	18.9	
10	1.4	15.5	
9.1	9.9	1.8	A
7.7	35.5	2.0	A
9.5	35.7	34.3	
9.6	18 4.1	50.8	
9.7	14.4	0.8	A
9.5	24.2	23.3	
8.9	24.8	47.5	CZ
9.4	19 4.9	56.5	WZ
9.8	6.3	45.3	
9.7	32.1	28.5	
9.6	20 24.4	55.0	
10	28.2	11.8	
10	30.8	3.5	
8.6	31.3	43.7	B
9.6	42.1	28.2	
8.8	48.1	28.9	WZ
9.2	22 6.9	13.8	A
9.0	23 1.8	41.2	A
9.5	50.2	58.7	B
9.5	56.7	48.4	A
9.3	24 21.1	0.2	
9.6	22.8	12.1	
9.8	38.6	24.2	
10	44.7	50.4	
8.8	25 14.7	35.2	WZ
10	27.7	5.7	

3161—3220

	11h	—22°		
m	m s	′		
9.9	25 42.7	5.7		
7.5	44.2	38.3	A	
9.7	56.2	1.2		
8.3	26 5.7	20.4		
9.5	9.1	40.6	A	
9.1	16.8	23.3		
9.4	21.5	1.9		
9.8	23.3	25.3		
8.2	32.9	38.7	A	
9.7	27 4.7	6.4		
9.1	14.0	54.2	WZ	
9.0	32.1	48.1	A	
8.7	37.6	45.9	A	
9.8	39.3	20.4		
8.8	28 10.0	43.2	A	
9.2	29 0.6	3.2	A	
9.0	8.9	50.3	A	
9.4	18.1	16.2		
6.7	44.4	8.6	A	
9.6	51.8	12.6		
8.2	30 10.1	25.1	B	
9.0	24.9	52.1	A	
9.8	31 2.4	33.8		
9.5	5.5	28.9		
9.2	9.8	52.6	A	
9.8	16.6	5.0		
9.6	18.0	24.0		
10	58.3	45.4		
9.3	32 17.1	11.6		
9.8	48.3	41.4		
9.8	57.3	11.2		
9.5	33 9.2	42.8		
9.1	31.3	14.9	WZ	
9.0	32.9	16.8	B	
8.5	34 8.8	37.1	B	
9.6	19.7	47.9		
9.5	30.4	17.8		
9.2	32.8	26.6		
9.4	35 2.2	35.6		
9.8	5.1	47.0		
9.8	24.9	47.7		
9.8	55.2	34.2		
9.5	36 17.4	6.8		
8.9	53.2	13.0	A	
9.2	59.7	57.0		
9.2	37 2.8	20.2	A	
9.8	12.6	34.0		
9.8	34.1	58.4		
9.9	49.5	26.4		
8.9	38 5.7	12.5	A	
8.6	17.3	10.8	A	
7.8	39 8.9	16.2	A	
9.6	51.4	3.7		
9.3	59.9	30.0	A	
8.6	40 3.4	14.1	A	
9.8	7.4	33.8		
9.7	8.9	26.8		
9.8	19.4	27.3		
9.8	58.9	54.1		
7.1	41 8.7	16.8	A	

3221—3280

	11h	—22°	
m	m s	′	
9.9	42 1.8	32.2	
9.6	30.8	7.2	
8.3	37.0	14.1	WZ
9.5	41.8	45.9	
9.1	43 10.7	21.0	
8.2	17.2	40.5	A
9.3	23.6	3.7	
9.1	28.9	42.7	A
9.0	29.9	25.4	
9.5	30.2	33.5	
9.7	58.7	46.8	
9.0	44 15.4	35.4	
10	50.6	2.0	
9.8	45 56.6	25.7	
9.1	46 38.1	42.2	
9.0	47.8	17.3	WZ
9.8	47 21.5	52.9	
7.8	27.0	44.8	CZ
10	31.6	5.1	
9.9	50.0	36.1	
9.7	52.5	37.9	
8.0	48 10.0	38.0	B
9.5	29.4	56.1	
9.4	53.4	47.5	
9.6	56.3	15.0	
10	49 41.2	15.4	
9.4	54.8	20.2	
8.5	56.6	42.0	WZ
8.5	50 8.8	23.8	WZ
9.3	22.8	53.1	
9.7	39.3	18.5	
9.4	50.2	18.1	
9.8	56.3	47.0	
9.1	51 7.3	50.3	
9.8	21.7	13.8	
9.4	37.1	1.5	
7.3	38.2	36.4	A
9.2	52 15.0	42.9	A
9.5	48.0	14.2	
10	53 38.6	46.0	
9.4	40.1	50.0	A
9.0	43.6	32.2	WZ
9.8	48.7	42.5	
8.9	56.0	18.4	WZ
9.8	54 16.4	39.4	
9.8	26.8	37.8	
9.1	51.0	57.5	A
9.8	55 48.2	10.9	
10	49.2	14.4	
9.5	56 10.1	21.1	
9.8	36.3	51.9	
9.6	37.3	40.0	
9.2	52.8	5.5	
9.5	59.9	9.1	
9.5	57 3.9	55.5	
9.3	9.8	17.1	
9.7	27.4	21.9	
9.8	37.0	32.1	
9.6	39.5	46.5	
9.6	41.4	49.1	

3281—3340

	11h—12h	—22°	
m	m s	′	
9.1	58 1.8	41.7	
8.7	23.8	53.8	A
9.4	38.7	3.1	
8.3	42.9	47.4	A
9.8	47.9	19.2	
9.5	59 12.8	53.8	
9.1	19.4	13.8	
9.1	25.3	40.4	
9.8	29.0	52.1	
8.8	29.7	18.0	
7.0	37.2	57.6	A
9.8	1 4.8	51.8	
9.0	22.6	50.4	A
9.1	35.5	4.2	
8.5	52.4	34.5	WZ
8.5	54.3	58.3	A
9.3	56.0	58.8	CZ
9.8	58.3	52.0	
9.5	59.5	35.5	
9.0	2 14.8	8.0	
9.8	26.6	11.8	
9.2	32.7	40.4	
9.6	3 4.1	20.0	
9.5	20.0	6.9	
6.0	36.5	47.4	A
9.1	4 9.0	57.9	A
9.4	47.0	13.5	
9.8	54.5	14.3	
9.0	55.9	3.1	A
8.8	5 10.6	0.6	A
9.8	18.8	22.1	
9.8	20.0	32.4	
9.3	6 12.9	36.0	
9.8	18.9	13.2	
9.8	21.4	44.5	
9.8	27.3	9.2	
9.5	7 36.5	3.7	
9.3	49.3	19.1	
9.0	57.7	58.6	A
9.6	8 6.8	14.9	
9.3	9.5	6.0	
6.8	16.8	32.6	B
9.8	41.5	14.7	
9.3	42.0	1.7	
9.6	49.1	1.0	
9.4	9 34.2	40.7	
9.8	55.1	6.3	
9.8	56.7	25.4	
9.8	10 0.7	57.7	
9.3	1.4	41.8	
9.7	22.7	26.8	
9.5	23.5	29.9	
9.1	51.3	8.7	A
9.4	11 2.6	55.4	
9.8	5.2	25.6	
9.3	7.8	12.3	A
9.0	30.1	4.6	A
8.9	35.5	54.9	WZ
9.3	37.4	5.4	A
9.8	40.6	34.8	

3341—3400

	12h	—22°	
m	m s	′	
9.4	11 47.1	32.2	
9.1	56.6	19.3	A
9.8	12 6.5	7.6	
8.8	11.1	37.5	WZ
9.8	11.8	55.6	
9.2	34.4	22.5	A
9.5	48.0	54.5	
9.6	55.8	51.8	
10	13 16.6	51.6	
9.4	21.4	57.3	
8.6	39.8	52.1	CZ
9.3	49.9	17.2	A
7.7	14 9.3	5.3	A
9.8	18.5	31.3	
9.9	19.4	46.7	
9.8	35.8	56.1	
9.5	44.9	19.9	
10	46.6	11.8	
10	56.9	10.3	
9.7	15 7.4	17.3	
8.5	10.4	27.1	WZ
9.4	20.9	27.2	
9.8	56.8	21.2	
9.9	16 29.9	7.4	
8.8	42.7	2.3	A
9.8	17 3.4	41.6	
9.0	7.8	52.6	CZ
9.4	44.7	26.6	
9.9	47.2	5.6	
9.8	54.2	42.0	
8.3	18 5.9	1.0	A
9.8	18.0	57.9	
9.7	19 25.7	36.3	
9.7	35.6	11.0	
9.7	20 20.3	23.5	
9.1	26.1	37.0	
8.5	31.4	25.5	A
9.1	33.6	23.0	A
8.2	21 6.1	7.1	A
9.8	59.5	15.0	
9.4	22 0.5	23.5	
9.9	38.7	15.1	
6.0	43.0	53.9	CZ
9.6	48.9	3.8	
9.0	51.9	44.9	CZ
9.1	23 10.9	32.6	
8.8	31.4	29.8	
9.6	43.5	12.1	
9.4	24 31.3	17.0	
9.7	56.2	4.1	
9.4	25 28.3	45.7	CZ
9.7	47.3	2.9	
9.4	51.3	47.5	
8.9	52.4	12.2	A
7.8	26 11.7	43.0	A
9.0	17.5	17.4	
9.8	20.8	33.6	
9.0	25.8	24.2	
7.5	28.7	44.8	A
9.1	42.8	10.0	A

3248: 56°14 41′28″.5 B_1, Ep. 1885.30

3401—3460

	12h		−22°	
m	m	s	′	
2	26	47.2	35.1	B
8.7	27	12.2	40.3	A
8.7		27.7	21.3	A
9.5		35.2	10.6	
9.8		46.6	30.4	
8.7	28	41.0	10.4	
9.2		58.1	42.5	
9.4		59.6	3.7	
9.8	29	22.1	39.0	
8.9		43.0	52.6	CZ
9.5	30	28.6	2.9	
9.8	31	16.4	45.9	
9.7		32.2	8.9	
9.0		32.7	10.5	
9.8		34.5	33.8	
9.8	32	4.0	49.0	
9.0		7.9	34.5	
9.2		15.1	12.5	
8.3		16.9	45.0	A
8.9		22.4	39.9	A
9.9		54.8	34.9	
10	33	32.3	29.5	
9.0		42.9	43.4	A
9.5		48.4	9.1	
9.8	34	28.2	40.9	
9.0		32.3	4.6	A
9.5		42.2	20.8	
9.8	35	2.3	3.1	
9.8		31.0	32.3	
8.6		42.2	40.5	
9.3		56.7	52.2	CZ
9.3	36	0.2	48.4	CZ
9.4		2.6	52.1	CZ
8.3		4.5	3.7	A
9.8		17.6	19.0	
8.8		21.0	16.1	A
9.6		24.5	11.2	
9.8		34.7	26.4	
9.8		44.7	39.4	
9.0		47.2	40.8	
9.8		51.1	53.7	
8.5		59.6	27.5	
9.8	37	9.4	31.0	
10	38	23.1	20.8	
10		25.7	15.0	
9.6	39	50.5	7.4	
9.5	40	22.2	32.3	
8.8		56.6	46.1	A
9.4		59.5	11.3	
9.4	41	10.1	12.7	
9.2		19.1	47.9	
7.5		20.0	20.8	A
9.9	42	40.5	57.1	
9.4	43	51.2	40.0	
9.7	44	0.3	42.0	
9.1		9.3	49.9	
9.5		13.7	32.2	
9.7		16.2	0.2	
9.7		20.0	4.4	
9.4		32.1	22.5	

3461—3520

	12h—13h		−22°	
m	m	s	′	
9.1	44	35.9	12.2	
7.0		51.5	20.9	A
9.4		58.8	22.3	
10	45	19.5	14.3	
8.7		23.6	22.7	A
9.4		36.5	0.3	
9.0		50.8	5.2	
9.8		56.0	58.9	
10		57.7	50.3	
8.0		59.7	19.2	A
9.8	46	2.2	5.4	
9.4		35.3	33.0	
9.5	47	12.3	27.8	
9.0		39.1	55.2	A
9.2		52.3	9.6	
9.2	48	9.3	49.1	CZ
9.4		9.4	9.9	
9.4		11.3	11.6	
9.7		35.6	32.3	
9.4	49	11.7	3.8	
9.5	50	10.2	53.5	
7.2		20.5	10.1	A
8.5		50.2	31.2	A
9.1		53.9	4.3	
9.5	51	24.7	50.4	
9.8	52	28.6	48.2	
9.0	53	4.3	13.0	
8.0		47.7	42.3	
9.5	54	53.7	8.1	
9.0	55	24.5	31.7	
9.5		55.1	48.7	
9.0	56	4.5	44.4	A
9.5		13.5	31.0	
10		24.3	19.6	
9.5		26.0	37.5	
8.3		47.4	3.1	A
9.8		51.0	20.2	
9.5	57	7.0	10.8	
9.2		8.4	2.2	
9.3		30.0	53.0	
9.2		53.3	7.7	
9.7		54.2	5.3	
9.2	58	17.0	53.4	A
9.5		38.6	10.4	
9.1		42.9	46.7	CZ
10	59	12.5	15.7	
9.4		24.6	0.5	
8.0	0	18.5	48.5	A
9.5		22.4	55.9	
9.5		36.4	51.0	
9.7		39.1	34.9	
8.8		43.4	54.1	A
9.0		52.0	19.9	B
9.5	1	8.5	8.8	
5.0		14.1	20.3	B
8.2		25.3	25.7	
9.1		28.9	40.7	
8.2		38.5	4.6	
9.5	2	4.8	14.3	
9.0		10.8	24.1	

3521—3580

	13h		−22°	
m	m	s	′	
7.5	2	19.9	38.2	B
7.5		30.8	50.7	B
9.6		34.4	12.3	
9.9	3	0.0	7.0	
9.2		25.8	49.0	
9.9		49.2	2.2	
9.9	4	26.8	42.9	
9.0		32.7	34.0	
9.8		47.3	35.3	
9.4		54.7	12.5	
9.8		56.1	14.0	
9.8		57.0	8.0	
9.3	5	4.4	7.4	
8.3		22.5	9.6	A
9.8		25.7	25.2	
9.8		37.4	49.6	
9.8	6	0.8	45.3	
9.2	7	17.0	3.0	
9.7		33.6	28.9	
9.5	8	16.2	2.1	
9.5		20.1	3.2	
8.5		23.2	46.6	CZ
9.4		30.3	4.2	
9.8		46.1	52.0	
9.5		53.0	42.5	
9.8		53.7	35.4	
9.5	9	23.0	50.8	
8.6		30.3	20.6	WZ
8.6	10	0.0	41.2	A
9.8		24.1	1.4	
9.8		35.4	8.1	
9.8		53.5	36.3	
9.8		56.0	39.0	
3	11	1.5	24.0	A
9.8		10.5	28.7	
8.8		13.1	40.4	A
9.4		23.4	15.3	
9.0		30.5	54.2	A
9.8		39.5	15.6	
9.2		55.0	35.7	
9.4		55.8	32.8	
9.7	12	17.7	15.2	
9.8		57.9	19.5	
7.0	13	31.1	1.7	A
9.8		47.8	3.8	
9.3		48.2	52.5	
9.1		48.5	45.7	
9.9	14	2.9	30.2	
9.8		4.2	16.0	
9.2		14.4	5.3	
9.8		21.4	3.2	
8.4		40.3	11.3	WZ
8.9		41.9	11.4	A
9.9		56.4	6.0	
8.9	15	0.9	54.4	WZ
9.1		19.7	6.8	
9.7		40.9	18.0	
10	16	32.2	3.5	
9.0		35.1	49.4	A
9.7		49.4	58.4	

3581—3640

	13h		−22°	
m	m	s	′	
8.5	16	59.3	35.6	WZ
9.5	17	7.1	56.2	
9.0		33.6	8.8	
9.5		46.9	9.6	
9.5		50.9	5.7	
9.8	18	6.4	0.9	
9.6		12.0	15.7	
9.0		14.8	20.6	A
8.1		20.8	29.3	A
9.7		24.4	35.9	
9.5		40.4	6.5	
8.7		41.0	28.4	A
9.7		48.4	5.5	
9.4	19	0.3	57.0	
9.4	20	0.5	45.7	
9.6		53.5	34.0	
9.8		53.6	10.9	
9.5		55.5	45.4	
9.5	21	17.4	27.2	
9.0		18.7	25.0	
var		47.2	31.9	B
9.0	22	20.9	29.9	
9.0		29.5	44.7	A
7.7		32.9	53.8	A
8.3		40.9	20.8	
9.5		41.4	31.5	
9.1		45.0	42.7	
9.7	23	5.4	9.8	
9.7		8.5	4.0	
9.7		19.0	16.4	
9.4		23.7	4.2	
9.5		41.4	39.5	
9.4		53.5	10.4	
9.8		57.9	51.1	
8.7	24	7.8	8.5	A
9.0		9.3	12.9	A
9.1		11.7	13.3	
9.5	25	5.3	37.1	
9.3		16.8	56.6	
9.8		29.0	25.8	
9.8		29.3	33.5	
9.5		46.0	11.3	
9.1	26	33.1	4.5	
9.8	27	13.7	32.4	
9.8		20.8	22.8	
9.7		42.3	20.3	
9.0	28	13.8	54.9	
9.7		27.0	15.6	
8.0		37.3	8.4	
7.0	29	11.5	52.3	B
9.2		19.2	30.2	
9.7		34.2	9.7	
9.8		43.1	51.9	CZ
8.3		48.6	1.6	A
8.2		58.6	28.7	A
9.3	30	0.3	19.6	
9.0		13.8	17.7	
8.0		15.9	57.1	A
8.9		19.4	2.1	A
9.3	31	2.2	4.3	

3641—3700

	13h		−22°	
m	m	s	′	
9.4	31	47.3	1.0	A
9.7		58.2	8.9	
9.0	32	22.7	17.7	A
9.5	33	16.5	45.0	
6.7		30.3	42.8	A
9.3		36.0	52.2	A
8.7	34	1.2	22.7	A
9.4		44.0	35.2	
9.2		56.3	26.5	A
9.4		59.5	25.2	
9.3	35	4.7	4.4	
9.5	36	9.7	0.9	
9.8		13.2	0.3	
9.5		20.5	55.5	
9.3		22.7	0.8	
9.9		28.5	33.4	
9.2		41.4	0.6	
9.8	37	55.0	11.4	
9.8	39	10.4	41.1	
8.5		10.4	45.1	CZ
8.3		41.8	42.0	WZ
9.5	40	14.3	38.0	
9.2		16.8	55.2	
9.0	41	22.7	44.7	CZ
9.7		41.0	30.2	
9.8		41.3	48.9	
9.3	42	4.5	20.9	
9.4		16.7	19.6	
9.6		18.0	39.7	
9.7		41.8	7.4	
9.5		45.3	42.9	A
9.2	43	40.2	24.2	
9.1		57.7	54.4	
8.8	44	40.3	19.1	A
7.8	45	1.7	47.7	A
7.7		58.2	49.5	A
8.0	47	0.2	57.3	A
9.7		16.5	12.7	
8.8		20.0	2.7	A
9.1		41.2	19.9	
9.8		41.3	11.9	
9.6		41.9	37.2	A
9.8	48	2.7	17.4	
9.8		5.7	17.5	
7.7		55.6	23.1	B
9.3	49	19.6	38.3	
6.6		23.1	18.2	B
9.6		39.5	0.1	
9.5		58.0	24.9	
9.3	50	2.1	40.5	
9.6		6.5	21.1	
9.5		20.0	50.0	
9.6		22.2	10.3	
9.4		25.7	31.5	
9.4		28.4	32.8	
8.9		32.7	9.3	
8.9		38.3	32.1	WZ
9.8		39.2	10.3	
9.7	51	12.0	29.0	
9.0		19.5	10.2	

3601: roth

3701—3760					3761—3820					3821—3880					3881—3940					3941—4000				
	13h—14h		—22°			14h		—22°			14h		—22°			14h—15h		—22°			15h		—22°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.6	51	25.4	48.7		9.1	9	39.8	11.9		9.3	30	8.2	14.4		9.5	52	24.4	25.4		9.5	14	11.2	24.2	
9.5		27.0	48.9		9.8		52.5	54.1		8.0		39.4	40.9	B	8.5		38.1	36.7	A	9.3		17.1	35.1	
8.2		56.5	43.5	A	9.5		59.4	14.3		9.1		54.8	24.1		9.6	53	55.0	42.5		8.5		17.8	22.7	A
9.5	52	26.5	43.3		9.4	10	36.4	48.7		9.8	31	39.4	53.4		9.3	54	2.8	55.5		9.8		22.0	17.7	
9.4	53	3.5	12.1		7.3		55.2	16.7	A	10		43.8	47.0		9.6		14.1	11.5		9.2		32.3	54.4	
8.8		10.6	38.7	A	9.7		59.8	12.8		9.3	32	45.3	41.2		8.5		27.1	32.2	A	9.5		50.2	54.6	
9.8		23.2	14.8		8.5	11	9.4	42.3	A	9.5	33	21.8	37.1	A	9.2		33.7	7.2	WZ	9.6	15	18.3	57.6	
9.3		46.4	59.2	A	9.5	12	27.9	43.6		9.4		34.2	0.4		9.0		42.5	39.8	A	8.8		43.9	12.4	A
8.3		49.2	40.4	A	9.5		49.2	34.6		7.2	34	5.2	48.1	A	9.8		59.5	13.5		8.5	16	20.2	59.3	CZ
9.8		56.9	54.3		9.7	13	0.1	30.1		9.2		10.8	9.0		9.8	55	6.0	14.6		8.5		24.9	50.3	CZ
9.5	54	21.5	38.2		9.7		13.8	40.1		9.4		27.8	22.4		9.8		11.0	53.5		9.0		28.5	23.0	
9.8	55	3.9	37.5		9.5		17.4	5.1		9.5		31.0	39.6		9.1		23.5	54.4	CZ	9.8		34.6	10.3	
9.6		10.7	20.4		8.6		20.3	10.0	WZ	8.9	35	6.2	23.8	A	9.4	56	0.4	0.2		9.0		54.7	48.4	W
9.4		32.4	34.4		9.7		26.7	3.3		9.8		35.5	6.5		9.4		33.5	35.9	B	9.4	17	7.4	15.4	
9.6	56	44.3	37.3		9.0		29.2	20.9	WZ	9.9		45.9	13.9		9.3		38.9	37.2		9.8		40.3	31.4	
8.7	57	17.8	28.2	A	9.5		31.4	14.5		9.0		59.7	21.1	A	9.5		46.5	2.4		9.5		51.9	52.9	
8.6		29.9	26.4	A	9.8	14	17.9	40.9		9.0	36	1.7	22.6	A	7.5		53.4	26.8	B	9.8	18	17.1	44.2	
10		38.2	1.4		9.0		19.2	16.1	A	9.5		13.8	8.3		9.1		56.5	25.5		9.8		37.2	22.1	
8.8		56.6	1.9	A	9.0		28.8	24.5		9.1		13.9	42.3		8.5	57	24.7	23.8	B	9.2		41.2	22.8	A
8.7	58	21.8	59.9	A	9.6		45.8	33.0		9.0		22.0	15.7	A	9.2		46.9	39.5		9.5	19	39.6	45.1	
9.2		56.3	25.3		9.8		52.6	15.7		9.5	37	21.1	51.3		8.0		47.4	45.1	A	9.5	20	0.8	54.8	
9.8	59	2.7	26.4		9.8	15	9.3	41.2		9.5		33.7	0.3		9.2	59	26.2	8.3	WZ	9.8		21.7	14.9	
9.0		14.3	47.0	B	9.8		9.7	59.9		10		34.2	18.0		9.5		47.3	46.1		9.5		25.1	27.7	
8.2		40.8	36.3	A	8.8		40.8	3.4		6.3		47.7	32.0	A	7.7	0	27.8	30.1	B	9.6		34.6	25.5	
9.9		50.2	2.6		9.5		41.1	48.1		9.7	38	5.4	28.6		9.0		32.4	38.6		9.0		48.1	11.7	
9.8		55.9	18.8		9.2		42.4	41.0	A	9.5		35.1	23.0		9.6	1	1.9	5.1		9.7	22	10.2	16.1	
9.0	0	38.1	4.3	B	9.5	16	5.8	45.0		9.5		39.1	35.6	A	9.8		13.8	51.4		9.8		15.6	30.0	
9.7		49.7	36.7		9.3		46.7	48.7		9.2	39	14.5	16.9		8.3		36.5	9.9	WZ	8.9		33.5	55.8	B
9.0	1	1.3	4.4	B	9.8	17	55.8	9.8		9.7	40	45.6	3.9		9.4	2	48.7	52.3		9.1	23	22.0	20.8	
9.7		14.7	43.8		9.4	18	5.2	44.5		9.8	41	35.8	11.8		9.8		55.3	15.6		9.8		46.0	36.6	
9.6		51.2	59.1		9.5	19	6.4	27.2		9.4		53.0	27.9		9.1	3	55.1	48.1		9.5		52.2	58.7	
9.8		58.7	1.8		9.8		33.0	41.3		9.1	42	12.0	39.1	A	9.7	4	22.8	2.6		9.3	24	1.5	32.6	
9.3	2	10.2	40.5		7.8	20	9.7	21.5	WZ	9.5		30.9	48.5	A	9.2		24.6	41.1		9.5		2.9	56.1	
9.7		28.4	11.2		8.1		16.5	18.5	WZ	9.3	43	20.8	4.9		9.6		31.5	10.5		9.5		24.0	31.6	A
9.6		30.3	54.2		9.8		33.0	21.8		9.1		49.9	24.6		9.5	5	17.2	13.7		8.0		43.9	58.2	A
8.5		30.3	15.2	A	9.8		51.8	12.9		9.5	44	1.9	34.9		8.5		19.1	59.5	CZ	9.9	25	28.1	25.8	
9.3		34.1	48.1		8.8	21	15.0	46.5	CZ	9.8		48.1	10.8		9.2		30.6	48.9		9.0		50.0	30.5	
9.8		51.6	51.7		9.9		22.8	5.3		8.3		57.0	52.2		9.3		39.4	6.5		9.5	26	2.9	53.3	
9.5	3	5.7	41.7		9.3		50.5	54.5		9.2	45	1.4	29.8	A	9.8		54.2	2.9		9.1		13.2	16.7	
8.2		5.9	57.5	CZ	9.1	22	19.5	18.2	A	9.3		17.4	32.9	A	9.5	6	1.5	59.8		9.8		59.0	38.2	
8.6		8.4	7.8	A	9.1		55.0	52.8		9.2		58.8	7.4	A	10		28.6	36.4		8.9	27	11.3	53.1	A
9.5		14.7	25.5		8.8	23	8.9	20.1	A	9.8	46	24.3	6.5		9.5		39.6	49.3		9.2		14.4	30.7	
9.5		45.7	14.0		7.0		52.3	47.8	B	9.3		42.4	5.7		8.8		43.0	22.5	A	9.7		25.1	3.7	
9.6	4	32.2	44.4		9.3	24	8.4	0.6		9.5	47	3.6	32.6		9.8	7	24.3	1.5		9.6		40.4	9.3	
9.8	5	28.6	26.5		9.5		15.4	38.5		9.5		26.3	55.5		9.3	8	5.6	9.7		9.5		53.7	55.7	
9.0		39.7	33.9	A	9.3		29.8	57.7		9.6		27.5	7.1		9.0		49.3	40.8		9.3	28	13.3	27.5	
9.8	6	4.6	2.6		9.1		42.6	21.7	A	9.5		35.8	33.5		9.5	9	14.4	46.5		9.4		22.9	7.1	W
8.2		9.7	27.0	A	9.2	25	20.1	16.6		9.8	48	8.7	22.1		9.0		34.9	56.6	A	9.2		41.8	25.5	W
9.5		23.6	56.0		9.6		36.2	2.6		9.4		41.5	8.0		9.8		37.5	31.9		6.0	29	17.3	39.2	E
9.7		32.6	0.6		9.0	26	31.7	17.4		9.5		47.7	53.6		10	10	1.4	27.1		9.5		23.9	9.4	
9.0		42.1	43.3	A	10	27	11.8	0.8		9.9		48.2	17.8		9.7		23.2	13.0		9.7		40.8	57.1	
9.1		44.6	16.1		9.2		25.6	26.5		9.6		49.7	23.9		8.9		34.4	47.6	A	9.5	30	9.7	40.6	
9.1	7	18.0	24.0	A	9.3		36.1	34.1		9.6	49	14.8	1.7		9.5	11	4.9	57.4		7.7		13.3	33.7	A
9.4		21.8	14.0		9.8		45.0	48.8		8.8		30.6	55.6	B	9.1		38.9	22.4		9.4		22.9	6.7	
9.7		58.9	9.3		9.2	28	11.7	5.6		9.5		31.7	23.1		9.8	12	1.9	34.0		9.4		33.2	43.1	
9.7	8	17.6	49.4		9.5		25.9	43.4		9.7	50	17.2	8.5		9.5		27.3	28.6		7.0		49.8	40.0	A
9.8		26.5	12.2		9.2		31.5	32.0	A	9.7		57.8	17.3		9.5		27.6	9.8		9.4		59.6	45.5	
9.4		51.5	56.1		9.0	29	16.9	20.9		9.0	51	4.9	42.0	A	8.5	13	55.6	27.1	A	9.5	31	8.8	40.4	
9.2	9	5.1	11.7		7.5		42.4	31.5	B	8.0	52	8.8	15.9	A	9.1		59.8	2.7	WZ	9.3		13.3	25.0	W
9.6		32.8	4.3		9.8	30	0.6	54.1		9.8		23.5	10.5		9.3	14	5.8	53.6		9.7		15.6	51.5	

4001—4060					4061—4120					4121—4180					4181—4240					4241—4300				
	15h		−22°			15h—16h		−22°			16h		−22°			16h		−22°			16h—17h		−22°	
m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′		m	m	s	′	
9.7	31	15.9	6.8		9.4	50	48.4	38.6		9.8	5	30.6	21.0		9.0	29	30.7	57.7	A	9.8	46	36.2	26.9	
8.5		18.2	59.7	A	9.5		48.6	22.7		9.0		44.0	18.6		6.8		38.4	35.5	B	9.6		43.3	38.7	
9.7	32	0.1	8.6		9.0	51	9.8	16.0	A	9.5		56.5	50.7		9.2	30	7.8	51.6		9.3		43.5	47.9	
9.5		19.6	16.4		9.8		17.2	22.4		9.5	6	3.0	14.2		9.2	31	5.3	0.8		9.8	47	35.0	16.1	
9.9		34.0	12.5		9.0		19.1	9.0	WZ	9.5		8.0	57.2		9.5	33	3.7	52.8		9.3		36.2	13.7	
9.6		48.7	13.2		8.5		24.5	46.8	CZ	9.5		13.0	17.8		9.8		12.9	53.3		9.5		37.9	27.1	
8.0	33	20.7	48.3	B	9.5		30.0	55.4		7.3		17.8	0.3	A	9.3		14.0	47.0		9.5		53.3	58.2	
10		21.6	20.7		2		45.9	11.9	L	9.8		31.8	10.5		9.7		27.1	6.6		9.3		59.2	26.4	
8.3		32.2	33.8	A	9.0	53	15.0	24.2		8.7	7	5.0	26.7	B	9.5		30.7	25.3		5.5	48	3.9	54.7	A
9.8	34	39.7	7.6		9.5		19.8	36.3		9.1		20.3	47.5	A	9.1		34.4	25.4	A	9.0		17.7	20.8	
10		50.5	24.1		7.7		38.6	16.4	A	9.1		39.8	45.0	A	9.4		41.3	16.1		9.1		47.9	24.3	
8.6	35	33.0	14.4	A	7.8	54	8.9	46.7	A	8.6		40.2	47.6	A	9.4		52.7	50.0		9.8	49	5.9	2.5	
8.9		49.8	52.7	A	9.8		13.5	44.4		8.5	8	14.3	44.8	A	9.6	34	14.1	56.9		9.3		15.6	2.8	
10		50.3	6.7		9.7		19.0	22.0		9.8		20.5	28.4		9.2		31.0	3.7		9.0		23.2	48.1	CZ
9.0	36	20.6	37.3		9.5		21.9	45.4		neb		23.9	30.5	B	9.3		48.6	59.3		9.8		49.5	40.5	
9.5		28.5	56.3		9.5	55	27.0	2.1		8.0		36.5	33.1	B	6.8		58.9	27.2	A	9.5	50	34.7	26.8	
8.6		39.6	20.1	A	9.4		33.2	38.9		8.8		47.2	58.8	A	7.5	35	5.9	51.6	A	9.7		41.4	10.3	
9.4		42.1	11.9		10	56	38.8	49.4		9.3		49.3	50.7		9.5		29.8	0.8		9.8	51	0.5	6.1	
9.6	37	8.3	19.5		10		53.8	54.9		9.2		53.0	42.5		7.6		38.0	14.6	A	9.6		5.4	51.2	
6.7		11.0	17.4	A	9.8	57	5.4	34.2		var	9	0.7	35.0		9.0		54.7	43.7	A	9.5		40.0	58.5	
9.0		25.5	7.7		9.4		14.3	58.6		var		1.9	32.0	B	9.1	36	0.9	49.0	A	9.2		54.8	55.2	
10	38	23.4	54.1		9.1		24.5	12.1	WZ	9.8		3.9	14.0		9.5		7.8	15.7		9.4	52	8.7	57.2	
9.1		26.0	39.8		9.7		38.1	24.5		9.0		4.3	8.2		9.0		15.3	55.3		9.3		38.7	7.9	
9.8	39	13.3	22.1		9.0	58	3.8	30.1	WZ	9.2		10.4	32.0	B	9.4		21.0	9.0		8.5		41.5	35.8	A
9.4		26.3	13.7		9.8		14.8	42.7		9.2		31.5	20.6		6.5		26.6	54.4	A	9.9	53	4.4	45.2	
9.0		34.9	54.6	CZ	9.0		22.6	34.6		9.2		37.3	47.0	A	9.6		30.2	15.0		9.8		10.1	15.7	
9.2		35.6	56.0	CZ	9.9		35.0	15.2		9.2		39.6	55.5	A	9.0	37	47.2	2.7	B	9.7		37.4	6.0	
9.8		43.4	0.7		9.7		47.2	4.7		7.3		48.7	54.7	B	7.8		47.8	21.6	A	9.4		59.1	26.0	
9.1	40	2.0	23.9		9.5	59	22.8	36.4		8.9	10	13.0	24.9	A	9.5	38	3.6	50.5		7.5	54	36.7	56.2	A
9.5		30.0	35.6		9.8		30.1	17.4		9.7		16.4	30.8		9.8		28.7	20.5		8.9		57.8	27.6	B
9.5		44.9	29.1		9.7		40.7	52.1		9.2	11	1.3	4.8	WZ	9.5		49.6	23.7		9.8	55	1.3	16.8	
10		55.3	43.5		9.7		46.1	14.3		9.8		27.5	27.4		9.5		52.4	26.5		8.7		11.9	40.2	A
8.8	41	53.9	25.5		9.2		53.5	1.0	A	9.5		31.3	10.1		9.5		57.7	10.1		9.5	56	5.6	44.9	
7.3	42	5.7	48.6	B	9.5		56.3	28.3		9.5		45.0	3.8		9.6	39	21.3	11.7		9.2		25.9	40.9	
9.8		6.5	15.9		9.8	0	0.0	58.3		10	12	11.5	6.6		8.9		28.2	15.4	B	9.5		27.5	30.2	
7.4		34.0	10.9	A	9.4		3.6	56.6	CZ	8.5		12.5	14.2	WZ	9.5		37.7	29.1		9.4		47.3	11.5	
10		39.4	47.1		9.8		4.0	53.8		9.8		33.2	18.3		9.8		55.0	9.8		9.3	57	15.2	53.3	
9.8		41.6	35.2		9.5		5.6	9.7		9.0	13	41.3	17.5		9.1	40	1.2	19.8		9.3		16.1	38.5	
8.6		52.9	9.0	A	8.9		5.7	27.4		7.3	14	11.7	46.1	B	8.3		30.2	27.0	A	9.5	58	21.6	46.0	
9.5	43	0.8	51.9		9.5		7.2	19.2		9.5	15	3.8	58.8		9.8		31.0	1.6		9.5		29.5	15.3	
9.7		12.8	1.8		8.5		47.3	34.3	A	9.0		15.3	1.7	WZ	9.8		41.4	18.8		9.5		33.8	30.8	
9.4		13.7	3.0		8.5		47.5	47.3	A	7.7		46.4	18.7	A	9.4		41.7	29.6	WZ	8.8	59	3.0	17.6	A
9.1		50.6	35.4		9.4		51.5	13.4		9.8		51.9	0.5		9.8		57.7	50.9		9.6		18.5	49.3	
9.6	44	22.2	14.0		7.8	1	22.9	1.5	A	10		59.7	24.9		9.2	41	6.9	58.4		9.4		45.4	4.5	
9.5	45	40.2	44.6		9.3		34.9	4.5		9.3	16	13.4	19.3	A	9.8		22.5	56.2		9.8		54.9	19.8	
6.8	46	8.1	19.8	A	8.0		48.0	42.8	A	9.7	17	23.3	10.9		9.3		41.8	22.7		9.6	0	23.5	17.1	
9.5		16.8	28.9		9.4	2	18.7	11.9		10	18	48.3	18.0		9.3		42.8	48.7		9.4		28.9	50.0	
9.0		27.1	35.4		9.5		25.4	41.5		9.1	19	13.0	15.6		9.8		53.3	4.5		9.5		37.6	57.9	
6.5		32.9	20.7		10		33.0	20.0		10	20	16.3	6.8		9.5	42	4.9	42.6		9.3		42.0	58.3	A
9.4		36.8	3.8		9.1		37.8	49.1	A	9.3	21	3.7	31.4		9.6	43	11.6	9.1		9.8	1	1.2	12.8	
9.2		39.7	27.9		9.9		41.4	18.0		9.0		28.7	7.0		9.4		15.0	31.8		9.8		1.8	42.5	
8.4		42.4	56.1	A	10	3	10.7	44.6		9.5	22	21.8	33.5		8.0		19.7	39.6	B	9.5		15.8	56.5	
9.7		45.0	40.7		8.2		17.1	10.0	A	7.8		57.7	29.1	A	9.1		21.6	3.9	A	9.4		20.8	56.6	A
9.5	47	2.2	56.0		9.1		27.8	51.8	A	8.5	25	9.1	30.8	A	8.9		55.8	27.7		9.5		44.6	18.7	
9.3		46.2	33.5		9.7		46.3	15.5	A	8.9	26	2.1	18.3	A	9.3	44	45.2	55.2		9.3		47.7	30.1	
9.8		51.7	44.9		9.0	4	15.8	57.5	A	9.8		39.7	14.8		9.7	45	13.4	31.1		8.8	2	52.9	8.0	
8.0	48	13.1	45.6	A	9.8		16.1	43.6		9.4	28	21.9	41.8		9.4		14.3	4.5	WC	9.7	3	19.4	7.6	
8.5	49	26.5	7.3	A	9.5		28.6	47.9	CZ	9.5		45.6	49.8		9.7		17.3	31.6		9.2		29.9	58.9	WZ
9.4	50	2.1	32.0		8.8		36.1	6.8	A	9.8	29	11.0	52.7		9.1	46	2.6	36.3		7.7		38.6	44.4	A
10		31.0	50.0		8.8	5	21.8	3.8	A	8.9		26.9	8.7	A	9.8		30.4	24.8		9.5		44.6	24.5	

4275: neb (globular cluster) GC 4269

4301—4360

m	17h m	s	—22° ′	
9.5	4	10.9	42.5	
9.5		12.8	54.5	
9.8		34.0	50.4	
9.6		40.0	24.9	
9.2	5	8.6	20.0	
10		13.1	2.3	
8.8		21.7	24.0	WZ
9.8	6	8.5	55.1	
9.4		52.9	47.5	
8.9	7	37.3	0.2	
8.8	8	16.5	18.1	A
10		19.2	58.8	
9.4		21.1	27.2	
9.3	9	2.6	26.8	
9.8		38.3	52.3	
9.5		41.0	48.6	
10		54.7	29.9	
8.8	10	9.5	32.8	A
9.2		32.8	5.2	
8.9		45.1	50.5	A
9.5		50.6	25.0	
10	11	4.4	48.2	
9.4		12.5	33.2	A
9.6		20.6	24.9	
9.1	12	0.9	4.9	A
9.4		20.7	46.1	
8.3		46.4	46.4	B
9.3		52.9	43.2	
8.0	13	4.5	36.0	A
9.5		25.4	51.5	
9.0		53.1	32.7	A
9.4		58.5	29.6	
8.7	14	9.6	26.3	A
9.5		11.1	12.4	
9.0		20.4	20.2	
7.2		26.6	52.1	B
9.4		32.1	37.7	
9.6		32.9	19.6	
9.5		43.4	40.3	
9.8		58.8	57.0	
8.3	15	38.9	39.7	A
9.4		48.5	8.4	
9.8		54.0	30.1	
9.5	16	9.4	39.7	
8.9		29.8	44.3	
9.5	19	13.4	45.6	
9.3		46.5	25.0	
9.5		54.4	56.8	
8.5		55.9	27.5	A
9.5	20	18.4	13.3	
10		24.3	7.2	
10		34.5	5.5	
9.1		56.9	17.8	
9.4	21	0.4	50.4	A
8.7		19.9	49.5	A
9.5		35.8	5.9	
9.5		45.4	18.1	
10		48.3	55.2	
9.3	22	19.3	17.2	A
8.8		39.2	9.6	A

4361—4420

m	17h m	s	—22° ′	
9.1	22	59.8	58.5	CZ
9.0	23	10.1	53.0	A
9.5	24	3.4	24.0	
9.5		6.5	21.7	
9.0		48.6	32.1	
8.1		51.6	3.6	B
9.2		59.4	52.7	CZ
9.1	25	7.6	58.0	A
7.5		14.9	55.2	A
9.1		28.3	6.8	A
9.5	26	29.0	13.2	
9.6		33.6	4.0	
10		55.5	50.0	
9.8	27	10.4	51.1	
8.7		16.6	26.4	WZ
9.8		38.4	40.6	
9.5		42.0	15.6	
8.8		44.3	20.5	B
9.2	28	18.0	33.4	
9.5		19.3	42.8	
9.8		27.7	5.4	
9.6		58.6	33.7	
7.5	29	18.1	29.3	B
9.3		31.3	40.3	
9.4	30	2.6	26.0	
9.5		25.0	29.0	
8.3	31	8.8	58.4	A
9.6		20.7	26.4	
9.7		34.5	12.2	
10		53.4	10.8	
9.2	32	6.9	13.1	
9.5		43.1	32.4	
9.5		46.9	38.9	
9.0	33	0.8	53.7	CZ
8.7		14.2	13.8	WZ
9.1		29.6	3.9	A
8.6		56.5	17.0	A
9.1	34	40.0	26.1	
8.7	35	9.3	41.4	A
9.2		11.9	1.4	A
9.5		13.2	58.5	
9.5		19.4	51.9	
9.2		21.1	12.4	A
9.4		36.6	52.4	
7.3		39.2	7.2	A
9.5		48.4	53.0	
8.8	36	17.8	49.0	A
9.3		37.6	3.1	A
9.5	37	2.5	25.0	
9.5		14.7	27.4	
8.7		15.0	33.7	WZ
9.1		26.9	37.9	
9.5		32.7	45.3	
9.8		57.8	44.6	
9.0	38	0.5	9.2	A
9.5		29.9	41.7	
9.5		33.1	22.3	
9.4		33.5	6.9	
8.8		33.6	1.2	A
9.4		34.0	9.8	

4421—4480

m	17h m	s	—22° ′	
10	38	35.0	43.1	
9.9		56.5	29.4	
6.7	39	0.6	24.7	A
8.8		4.4	55.0	CZ
9.1		5.9	7.4	A
9.2		14.4	37.0	A
9.8		31.8	4.9	
9.8		40.9	19.9	
9.5		45.3	34.3	
9.5		46.5	29.9	
9.5	40	55.9	7.7	
9.5	41	10.9	38.9	
9.2		32.3	55.4	WC
9.2		40.9	39.0	
9.2	42	4.5	36.9	
7.0		19.8	52.2	A
9.3		45.6	25.8	
9.5	43	6.4	37.0	
9.5		25.1	24.0	
9.7		29.2	0.8	
7.3		32.4	37.7	A
9.4		39.8	50.3	CZ
9.0		48.0	37.5	
9.4	44	10.4	16.3	
9.4		13.6	12.7	
8.3		27.0	30.0	A
9.1		30.4	18.2	
10		40.0	11.3	
9.5		44.0	14.5	
9.5	45	23.4	44.5	
9.5		27.4	40.7	
9.7		39.3	37.1	
9.5		42.0	32.9	
8.0	46	12.7	56.5	A
10		20.4	18.4	
9.1		24.9	3.0	
9.4		48.7	8.4	
9.5		49.1	0.9	
9.2		54.3	23.9	A
7.8	47	25.5	25.8	A
9.4		32.6	0.6	
9.1		38.3	46.0	A
9.6	48	32.6	21.0	
9.5		52.1	53.4	
9.0		59.1	12.7	WZ
9.5		59.2	41.6	
9.5	49	4.5	3.6	
9.0		7.8	33.0	A
9.1		8.8	57.6	A
9.4		17.7	8.9	
9.3		44.4	46.5	
9.5	50	1.1	47.9	
9.3		8.5	30.3	
6.8		11.3	29.7	A
8.5		12.0	21.9	A
9.7		28.3	4.7	
9.8		37.4	7.2	
7.3		40.5	26.6	A
9.0		50.5	58.9	CZ
9.0		53.6	56.0	CZ

4481—4540

m	17h m	s	—22° ′	
9.3	51	2.2	37.1	
8.9		4.1	38.2	
10		4.6	21.5	
7.5		14.8	31.9	A
9.4		15.0	17.0	
9.7		30.1	24.1	
9.3		32.9	23.0	
9.7		33.0	17.8	
9.3		37.0	57.0	
9.5		41.5	34.7	
9.0	52	8.3	14.4	A
10		16.5	23.6	
8.7		20.7	34.9	A
9.4		22.4	14.2	
9.8		28.1	10.3	
10		30.6	17.7	
9.6		46.8	18.5	
10		47.2	13.5	
10		52.2	38.8	
8.0		54.6	7.2	A
10	53	3.8	7.6	
9.8		5.5	27.1	
6.0		6.1	45.7	A
9.5		14.2	38.3	
9.8		15.8	21.5	
9.8		16.4	36.7	
10		17.7	14.0	
9.5		30.5	28.3	
9.2		33.3	19.4	
8.0		43.6	54.4	A
9.1		47.6	45.9	
9.8		52.8	11.5	
9.6		58.4	4.8	A
9.8	54	12.6	51.8	
9.5		14.3	29.2	
7.3		15.0	42.7	B
9.5		26.8	40.4	
9.2		26.9	49.5	CZ
9.1		28.9	1.7	A
8.3		31.7	52.7	B
9.1		38.9	18.2	
8.3		39.1	36.5	A
9.8		40.0	12.9	
9.5		45.6	3.8	
9.4		47.8	11.6	
9.8		49.8	25.3	
9.9		49.9	10.0	
9.3		57.2	30.5	
9.4		57.5	28.0	
9.0	55	3.9	13.9	A
9.6		5.3	49.5	
10		6.8	28.2	
7.4		8.9	50.3	CZ
9.4		11.1	30.9	
8.6		16.9	33.6	A
9.3		20.9	27.3	
9.4		21.4	26.1	
9.5		25.6	29.1	B
9.0		25.9	41.0	
9.2		26.1	26.9	

4541—4600

m	17h—18h m	s	—22° ′	
7.7	55	26.4	29.8	B
9.2		30.0	3.4	
9.1		31.6	29.3	A
9.6		35.0	29.1	
9.4		38.3	26.3	
9.7		43.6	13.2	
9.4		48.8	22.6	
9.5		59.7	27.1	
9.8	56	7.1	32.0	
9.3		26.8	24.3	B
9.8		30.6	50.9	
10		31.7	35.8	
9.4		33.7	6.6	
9.5		58.0	51.2	
9.0	57	5.9	12.6	WZ
9.5		10.1	38.2	
8.7		21.7	7.0	WZ
9.2		24.3	27.7	A
9.1		36.1	43.6	
9.8		58.8	24.1	
8.5		59.2	28.4	A
8.4	58	4.7	3.1	A
9.8		9.9	4.7	
9.7		18.8	15.3	
9.7		19.0	23.9	
9.5		22.1	41.5	
9.1		47.0	6.4	A
9.8		47.8	27.7	
9.3		54.0	54.4	CZ
9.0		54.0	7.4	A
8.9		54.9	5.0	A
9.7		59.5	56.8	
8.7	59	2.7	53.5	CZ
9.7		3.4	52.6	CZ
9.7		18.5	14.1	
8.4		24.4	16.8	A
9.4		37.3	9.6	
9.5		43.6	55.5	
9.2		46.6	43.5	
9.5		56.1	16.8	
8.5	0	0.0	10.2	A
9.0		12.0	11.3	A
9.0		26.5	47.7	
9.1		26.6	11.7	B
8.6		29.1	54.9	CZ
9.7		41.3	33.3	
9.7		49.2	34.4	
9.6		53.5	21.3	
9.7		58.5	31.8	
9.2	1	4.7	4.1	B
9.2		4.9	8.4	A
9.6		5.8	43.7	
9.5		32.8	24.4	
9.5		40.6	6.7	
9.8		46.7	16.1	
9.4		55.1	13.6	
8.0		59.4	15.6	A
9.5	2	0.3	12.6	
9.2		6.0	55.7	
9.5		9.1	9.0	

4601—4660				4661—4720				4721—4780				4781—4840				4841—4900			
	18h	−22°			18h	−22°			18h	−22°			18h	−22°			18h	−22°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.5	2 12.7	31.7		9.0	9 51.7	35.8	A	9.5	17 32.8	18.3		8.8	25 37.6	18.6	A	9.8	35 37.0	23.1	
9.4	17.6	20.2		9.4	10 14.5	59.5	CZ	9.2	48.7	16.2	WZ	9.8	47.0	29.0		9.5	52.8	57.4	
9.7	26.6	25.6		9.9	31.8	15.1		10	50.3	2.2		8.5	55.2	38.8	B	9.4	36 5.7	54.5	
9.8	33.7	5.2		8.5	32.6	47.1	B	9.3	59.1	58.9		9.4	56.3	19.2		9.8	7.6	6.3	
9.1	59.0	7.6		9.2	42.8	24.5		9.7	18 14.3	11.5		9.8	26 10.1	20.1		9.2	29.2	15.3	
9.8	3 1.8	25.7		9.1	45.2	29.9		9.7	17.1	56.5		9.7	11.4	9.7		9.5	35.5	16.8	
9.4	30.2	26.5		9.4	50.7	0.0		9.5	44.1	2.7		9.5	24.6	56.7		9.5	47.8	55.3	
9.5	45.2	16.7		9.0	53.0	8.9	A	9.6	45.6	11.6		8.4	24.7	5.4	A	9.3	51.0	11.1	
9.8	48.1	46.0		9.6	53.2	3.7		9.4	49.7	42.9		9.4	31.1	21.5		9.8	53.4	29.8	
9.8	54.3	21.1		9.0	53.9	35.0	A	9.4	50.8	28.1	WC	8.0	37.1	11.8	/	9.5	59.1	19.5	
9.4	4 5.2	27.4		9.4	11 4.8	25.5	A	9.8	50.9	15.5		9.8	41.8	25.7		9.3	37 17.2	16.0	
10	8.3	1.5		9.4	11.0	25.2		9.8	19 11.2	29.9		9.0	42.3	30.6	M	9.5	18.5	52.3	
9.1	10.2	29.2		9.5	11.6	17.4		9.0	25.8	30.2	WC	9.3	43.0	42.5		9.5	23.4	8.1	
9.8	24.4	16.0		9.8	20.4	58.5		9.8	35.3	42.0		10	52.8	16.5		6.2	36.4	31.7	A
9.6	27.6	4.7		9.9	25.2	35.0		9.5	37.6	58.1		9.8	56.2	48.5		8.9	47.5	5.0	A
8.8	33.3	51.4	CZ	9.3	25.9	14.1	A	9.0	40.2	54.5	CZ	9.8	27 1.3	6.0		9.5	38 0.5	26.1	
9.8	35.2	6.3		9.5	33.7	33.5		9.5	44.3	8.3		9.1	2.4	50.2	A	10	8.3	52.6	
9.0	38.4	4.1		9.2	40.9	12.8	A	9.5	20 6.4	22.3		9.5	17.0	1.5		8.5	11.4	44.0	
8.3	39.9	44.9	CZ	9.5	46.7	32.4		9.6	10.2	23.2		9.8	27.5	5.3		8.5	14.5	26.5	A
9.6	41.6	18.3		9.5	53.6	20.1		9.7	40.1	7.2		8.9	30.9	58.7	A	9.0	27.2	55.4	CZ
9.3	43.6	15.7		9.5	55.2	36.9		9.6	44.3	34.1		9.4	31.3	14.1		9.7	35.6	2.7	
9.3	49.4	23.4		9.6	12 3.0	5.1		9.1	48.7	15.8		10	47.4	56.7		9.5	56.0	2.3	
9.8	5 9.0	30.6		9.8	15.5	24.0		9.5	49.8	33.5		10	28 3.6	5.2		8.8	39 8.5	19.1	A
9.4	19.6	43.4		9.7	18.4	58.6		8.7	56.3	46.3	M	9.4	42.5	9.0		8.6	30.9	34.2	WZ
9.6	24.9	13.2		9.5	19.1	19.8		9.6	21 32.9	24.6		9.3	52.1	14.1	A	9.0	44.3	13.9	A
9.5	34.5	27.9		9.5	41.0	51.6		9.5	37.8	41.9		9.6	58.0	51.0		9.5	40 14.4	49.8	
10	42.2	7.0		9.8	48.3	23.0		9.5	53.1	3.8		9.6	29 2.1	47.5		9.5	28.6	16.3	
9.5	47.1	46.3		9.7	13 1.3	7.5		9.8	22 5.4	55.2		8.5	7.9	33.6	WZ	9.6	36.0	4.7	
9.5	50.0	27.3		9.5	2.4	34.1		9.8	6.2	37.7		9.5	11.4	12.8		9.8	36.2	31.5	
9.1	6 1.0	3.8		9.5	9.7	34.8		10	11.9	20.5		9.4	30.3	40.3		9.5	47.0	23.9	
8.6	4.5	2.6	B	9.0	10.7	8.7		9.5	26.4	36.1		9.1	32.1	11.4	A	9.6	41 9.4	51.3	
9.7	8.7	37.6		8.4	13.3	4.6	B	9.5	32.6	58.7		9.5	53.3	49.9		10	22.6	13.7	
9.3	16.3	38.8		7.2	16.2	59.3	A	9.3	46.7	59.1		10	30 15.9	20.8		9.2	24.0	0.8	
9.1	20.3	38.2		7.8	19.9	21.3	A	9.1	52.0	48.8	CZ	9.0	24.8	25.9	A	9.5	34.6	10.2	
9.0	20.9	28.5		7.8	25.6	17.9	A	9.2	53.7	13.8		9.3	31.3	45.7		9.5	37.4	2.3	
9.6	22.6	25.1		9.2	43.7	4.9		9.3	57.1	54.9		9.5	34.4	29.1		9.5	38.0	14.5	
9.4	33.7	8.7		9.5	48.3	57.7		9.5	57.2	10.2		8.0	47.2	5.4	A	9.5	39.6	10.1	
9.1	36.6	46.8		9.7	52.4	13.6		9.0	23 17.8	43.3		9.7	31 3.1	33.5		8.9	50.8	58.9	B
10	7 8.8	14.1		10	14 13.1	36.4		9.5	22.5	48.4		9.8	5.1	2.8		9.7	53.5	25.7	
9.6	17.2	35 1		9.0	16.9	21.0		8.7	30.1	9.3		8.7	25.8	47.3	A	8.5	57.0	25.7	A
9.5	20.9	18.0		9.5	16.9	1.1		9.0	43.0	29.9		10	31.0	39.9		6.9	42 6.6	19.3	A
9.5	29.0	34.2		9.1	17.4	40.5	M	9.5	43.1	23.0		9.4	54.6	25.0		9.2	12.4	44.8	A
9.0	36.2	4.4	A	9.7	30.0	24.2		8.9	45.4	23.6	A	9.5	54.9	3.7		9.5	14.9	47.2	
9.4	42.6	17.3		9.5	31.6	40.7		9.0	47.0	1.2		9.5	56.3	16.4		9.5	25.6	6.7	
9.9	49.7	2.6		9.8	43.6	43.1		9.8	47.8	12.2		9.5	32 0.8	0.3		9.5	36.7	17.7	
9.5	8 22.2	54.2	CZ	9.4	15 1.4	13.4		9.7	55.1	52.6		9.0	12.9	25.7		8.3	36.9	10.9	A
9.4	22.9	57.1	CZ	10	2.3	46.4		8.0	24 1.0	13.9	A	9.7	49.4	26.0		8.5	40.5	29.6	A
8.5	24.3	12.7	A	9.2	11.6	20.8		9.5	12.5	11.2		9.8	55.4	19.4		10	50.9	26.6	
10	30.1	1.9		8.6	11.8	6.7	WZ	9.5	21.5	6.0		10	59.7	5.3		9.3	51.4	0.1	
9.5	51.6	27.4		9.6	37.9	22.9		9.3	22.3	19.4	A	9.3	33 30.0	25.0		9.0	59.7	1.6	A
9.7	53.3	17.8		9.7	16 1.9	1.4		8.5	25.7	54.9	A	9.0	40.5	7.7	A	9.6	43 24.4	35.6	
9.5	9 6.7	11.8		9.9	8.7	33.4		8.3	34.2	43.8	A	9.1	44.9	28.5		6.8	25.5	4.8	A
8.3	9.7	20.2	A	9.7	10.2	4.9		9.2	43.2	27.5		8.6	54.8	17.9	A	9.4	28.1	22.2	
9.5	10.3	0.5		9.5	26.2	41.0		9.5	57.1	57.4		9.3	34 34.2	13.3		9.8	39.6	34.3	
8.2	12.3	23.1	A	9.5	28.4	35.0		9.2	59.3	44.4		7.3	34.9	32.6	A	9.7	47.6	20.5	
9.1	31.3	3.1	A	9.6	44.8	46.4		9.6	25 2.1	10.2		9.6	53.8	42.1		9.5	49.5	44.4	
9.7	32.9	0.5		9.5	47.3	0.2		8.9	3.4	22.0	A	7.8	57.9	48.3	A	8.0	55.5	28.5	B
9.8	40.9	58.4		9.3	55.9	5.0		8.7	5.3	32.1	WZ	9.0	35 14.6	45.6	A	8.7	44 1.5	33.7	M
9.4	44.4	1.1		9.4	17 28.7	44.2		9.5	17.9	32.4		10	22.7	9.0		9.7	9.5	33.3	
9.2	46.7	4.2	A	9.8	32.2	44.2		9.5	18.7	54.6		9.8	36.5	13.9		9.1	12.5	34.8	

4854 : gelb

4901—4960

	18h	−22°	
m	m s	′	
9.4	44 16.5	23.8	
9.5	52.5	30.3	
9.5	45 16.9	53.5	
9.5	17.7	33.9	
9.3	19.6	1.1	A
8.5	24.4	44.6	B
6.0	25.3	54.9	CZ
8.5	30.6	51.5	CZ
10	30.8	51.2	
9.5	45.6	9.3	
9.8	49.1	53.7	CZ
9.3	50.5	27.0	
10	56.6	26.9	
9.0	46 11.5	7.6	A
6.2	19.9	50.8	CZ
9.8	39.5	42.3	
9.2	49.0	26.8	A
9.7	59.7	15.7	
9.5	47 11.8	12.4	
9.4	43.1	11.1	
9.5	55.6	17.3	
10	57.7	20.6	
9.6	48 10.6	17.0	
9.5	21.0	28.9	
9.5	40.4	3.8	
9.8	47.1	1.8	
9.4	57.5	28.7	
7.0	49 40.9	43.2	WZ
8.8	44.8	9.7	WC
9.0	46.3	51.2	
9.0	59.0	59.8	
9.2	59.2	9.7	WC
9.2	50 6.4	39.8	
9.5	11.5	26.3	
9.3	17.0	26.0	
9.3	19.1	17.8	
9.1	31.5	5.5	A
8.3	54.2	0.9	A
9.8	51 10.1	20.2	
9.5	16.0	34.3	
10	32.0	3.6	
9.8	50.6	25.7	
9.3	52 27.3	2.7	WC
8.9	35.8	18.7	A
9.8	47.1	14.6	
6.5	52.9	53.5	A
9.5	59.6	23.8	
9.5	53 3.4	0.2	
9.5	4.6	31.5	
8.5	17.5	17.4	A
9.3	33.1	40.0	
9.5	43.5	48.8	
9.5	53.6	50.0	
9.9	54 15.7	1.0	
9.7	18.9	36.0	
9.7	30.9	8.2	
9.4	49.6	46.1	
8.5	59.4	54.8	A
9.4	55 13.0	4.2	
9.5	27.3	38.5	

4961—5020

	18h—19h	−22°	
m	m s	′	
8.7	55 27.8	45.4	A
9.5	29.4	25.3	
9.5	29.5	59.8	
9.5	52.7	36.6	
9.5	56 11.6	33.3	
9.5	16.7	26.7	
9.5	32.1	31.0	
9.2	35.8	3.6	
9.5	54.1	34.6	
9.5	57 10.6	29.8	
10	21.3	7.7	
8.5	37.0	49.1	A
9.5	42.2	23.4	
9.8	46.4	59.7	
9.1	53.2	18.2	
9.4	58 6.0	46.4	
7.2	15.5	42.8	A
9.5	20.3	34.6	
10	22.8	8.4	
9.0	30.0	57.4	A
9.4	32.1	39.1	
9.3	42.0	43.1	
9.5	51.1	28.1	
9.8	59 12.0	45.1	
9.1	16.1	35.4	M
8.7	30.0	0.6	A
10	30.8	15.8	
9.8	40.9	53.2	
10	0 5.6	41.1	
9.3	24.7	17.3	
9.4	44.6	49.1	
8.6	48.7	36.0	A
9.9	59.8	20.1	
9.6	1 36.6	39.6	
9.5	40.2	25.0	
9.6	42.4	2.6	
9.8	49.7	24.3	
8.8	2 17.1	47.6	WZ
9.6	25.2	42.9	
9.2	28.0	8.0	
9.1	42.2	50.4	
9.5	48.8	17.4	
9.5	49.5	14.0	
9.8	3 10.8	20.2	
9.5	11.8	10.1	
9.5	23.0	2.9	
8.0	25.3	9.6	A
9.5	27.6	32.1	
9.6	48.7	47.8	
10	54.8	6.2	
8.6	55.4	25.5	A
9.6	4 14.9	14.1	
10	38.1	6.4	
8.2	55.7	48.6	A
9.0	56.1	37.4	
9.8	59.4	8.3	
9.1	5 3.9	10.3	M
9.1	9.8	44.8	
8.8	10.9	10.9	A
9.7	20.3	59.3	

5021—5080

	19h	−22°	
m	m s	′	
7.3	5 27.0	17.8	A
9.3	33.4	11.1	
9.3	36.7	57.2	
9.7	51.8	12.4	
8.8	52.7	19.2	A
9.4	54.8	44.8	
9.2	6 10.7	16.5	
8.9	16.3	40.8	
9.1	7 5.2	37.0	
9.3	6.8	40.9	
10	8.1	10.0	
9.1	15.4	16.8	WC
8.8	15.8	5.0	A
9.6	17.2	2.6	
8.8	56.5	2.7	A
9.4	8 11.4	17.7	
9.8	13.8	59.2	
8.8	16.3	28.9	M
8.5	20.4	11.9	A
8.3	29.9	0.6	A
9.5	54.8	23.2	
9.5	57.1	12.4	
9.5	59.2	51.4	
9.5	9 31.1	31.2	
9.5	31.4	3.0	
9.5	36.8	47.8	
9.4	53.8	46.9	
9.4	10 3.0	1.5	
8.0	13.9	21.4	B
9.2	21.4	25.0	
10	27.3	3.0	
9.0	39.5	12.3	M
9.1	50.8	12.4	M
9.2	11 0.7	54.8	WZ
9.7	2.4	11.2	
8.3	2.4	27.3	A
10	8.6	10.5	
9.6	25.0	18.9	
9.7	30.8	23.8	
8.7	46.8	7.8	M
9.5	47.4	44.5	
9.5	55.0	1.7	
6.4	56.7	40.0	A
9.5	12 9.2	56.3	
8.4	16.1	4.0	A
9.2	21.6	20.8	
9.7	23.3	23.6	
9.5	34.3	3.6	
10	42.0	45.1	
9.4	43.2	53.2	
9.4	13 29.1	21.4	
9.5	32.1	49.1	
8.7	35.3	20.5	A
9.8	36.4	12.1	
9.4	38.1	42.2	
9.2	43.4	51.3	
9.6	48.0	17.4	
9.4	14 1.2	8.8	
9.5	4.2	37.7	
9.1	8.2	40.2	A

5081—5140

	19h	−22°	
m	m s	′	
9.8	14 10.4	14.5	
10	46.1	55.5	
9.4	47.5	25.9	
9.6	59.3	34.1	
10	15 0.3	13.3	
9.6	1.9	1.6	
9.5	11.4	4.9	
9.6	16.0	9.3	
8.8	20.2	1.6	A
8.8	35.9	51.2	
8.7	42.8	54.4	A
8.8	53.7	58.8	A
9.0	54.0	52.4	B
8.2	56.4	51.2	B
9.0	57.5	36.9	
9.5	16 20.7	9.9	
9.3	49.0	45.9	
8.9	54.5	47.5	A
9.0	56.0	36.9	
7.7	17 2.1	43.6	A
9.0	17.8	34.9	
9.4	18.4	19.2	
8.7	38.4	13.1	WZ
10	39.5	45.2	
6.0	40.5	3.1	B
9.3	48.6	34.4	
9.3	18 3.2	21.6	
9.7	6.1	36.5	
9.7	17.3	40.9	
9.8	27.3	28.7	
8.5	40.7	54.5	A
9.5	43.3	16.4	
9.8	19 0.4	18.9	
9.5	2.0	26.0	
10	8.3	22.0	
9.8	10.4	19.8	
9.4	14.4	10.0	
9.0	28.1	26.5	
8.8	37.9	33.3	
9.1	20 2.4	57.4	WZ
9.5	59.6	26.5	
9.3	21 10.2	8.7	
9.8	26.8	9.9	
8.9	30.4	16.5	WZ
9.5	32.5	32.8	
9.8	36.2	38.2	
8.8	39.8	48.0	
9.3	43.5	18.5	
10	22 19.5	7.8	
10	22.5	15.0	
9.3	41.7	0.4	
9.5	44.6	3.8	
9.4	46.9	6.1	
9.8	23 0.3	3.3	
9.6	10.7	1.6	
10	36.6	7.4	
9.5	52.1	29.5	
9.5	58.6	30.2	
9.5	24 4.6	29.8	
10	4.9	24.6	

5141—5200

	19h	−22°	
m	m s	′	
9.8	24 10.4	29.7	
8.7	17.1	18.4	A
9.8	29.4	24.3	
9.5	32.0	30.2	
9.5	44.5	44.8	
9.1	48.8	40.1	M
9.8	50.5	15.9	
9.8	25 8.5	11.5	
9.4	9.7	3.8	
9.7	14.6	15.6	
9.8	17.0	19.1	
9.5	20.9	36.7	M
9.5	27.2	57.8	
8.8	28.7	25.1	A
9.5	34.5	14.8	
8.3	26 6.3	18.7	A
9.8	16.4	41.0	
9.9	23.5	29.4	
9.8	56.8	1.3	
8.3	27 2.2	29.0	M
9.8	2.6	14.7	
9.3	10.2	51.8	
9.1	22.8	49.6	WZ
10	28.4	37.5	
9.4	46.2	40.4	
9.0	28 10.6	35.2	M
7.8	16.2	13.0	A
8.5	40.1	34.4	A
8.2	47.9	16.1	A
9.4	51.1	3.1	
9.4	29 1.7	4.2	
9.8	21.6	6.4	
10	24.5	25.0	
9.5	36.0	35.8	
9.5	37.4	32.7	
9.4	45.0	56.0	
9.4	49.6	36.7	M
9.5	30 29.5	41.8	
9.0	34.2	54.7	
9.8	40.4	56.8	
9.3	41.2	47.3	
9.7	31 16.4	12.2	
7.3	17.1	23.0	B
9.2	21.3	55.0	
9.8	28.0	56.4	
10	33.3	46.5	
10	33.3	47.4	
10	32 6.6	30.5	
9.4	14.2	56.4	
9.8	16.6	35.0	
9.0	23.5	45.2	
9.8	38.5	49.3	
9.5	33 3.6	28.4	
9.4	3.8	19.4	
9.5	14.5	47.4	
9.5	18.4	49.2	
9.0	22.5	42.8	WZ
9.5	34 10.6	39.0	
9.5	25.0	19.7	
9.5	33.8	59.6	

5201—5260				5261—5320				5321—5380				5381—5440				5441—5500			
	19h	—22°			19h	—22°			19h—20h	—22°			20h	—22°			20h	—22°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.1	34 42.9	33.2		9.8	43 56.7	53.1		9.3	55 39.6	12.3		8.8	8 3.6	54.7	WZ	9.9	20 46.0	23.5	
10	44.8	12.6		9.4	59.3	41.6		8.0	52.3	35.6	A	10	31.9	43.6		6.2	21 0.6	52.2	A
8.9	59.7	15.9	A	8.9	44 3.0	34.8	M	9.4	55.2	20.0		10	48.7	7.9		9.1	2.5	55.9	CZ
9.7	35 0.6	3.2		9.4	4.7	51.6		9.1	57.6	32.9	A	6.0	9 30.5	15.0	A	9.5	10.1	48.9	
9.1	7.5	47.5	M	9.6	12.1	52.5		9.1	56 4.8	0.1		7.8	33.8	26.4	M	9.5	13.6	21.8	
9.4	28.0	4.0	M	9.3	16.3	42.0		9.7	15.2	29.0		9.8	10 36.9	38.2		9.3	34.8	18.5	
9.1	34.3	35.0		9.5	45 3.8	48.7		9.7	16.1	47.3		9.1	37.3	5.8		8.8	36.5	59.6	A
9.5	36.0	2.2		9.6	5.0	8.4		8.8	17.5	19.5	B	10	39.7	1.0		9.7	48.1	9.6	
9.8	46.1	28.7		8.9	24.7	51.2	B	9.4	57 3.0	51.2		8.5	39.8	34.9	A	9.4	59.1	8.0	
10	51.7	36.4		10	38.2	24.0		9.5	6.9	29.1		8.8	11 9.0	20.1		9.4	22 17.2	58.0	CZ
8.3	36 2.9	53.4	B	9.1	58.8	7.0	M	neb	31.8	20.1		10	24.8	42.7		9.0	24.5	51.1	M
9.5	8.9	9.8		10	46 21.1	6.8		9.4	39.1	41.0		9.1	28.1	1.6	M	9.3	25.1	36.0	WZ
9.5	18.2	41.3		9.8	28.9	18.1		9.5	40.2	23.1		9.2	29.9	34.7		9.3	29.2	31.8	WZ
9.6	27.4	55.2		9.2	38.1	30.4		9.9	58 0.4	1.0		9.8	32.6	23.0		9.5	40.3	55.1	
9.0	30.1	43.2	M	9.4	42.8	7.4		7.6	1.7	4.9	A	9.6	12 9.2	11.2		8.7	23 7.7	59.1	A
9.5	44.0	27.2		9.3	48.0	37.3		9.3	19.5	26.2		9.1	9.8	16.4		9.2	18.8	31.0	
9.5	48.5	54.1		9.3	49.0	31.1		9.5	21.1	44.5		10	12.0	7.1		8.5	43.4	38.3	A
9.6	49.6	20.9		9.8	47 5.1	14.8		9.8	45.5	22.8		9.5	23.1	29.4		8.8	46.1	38.9	A
9.5	58.6	52.5		9.1	16.9	20.6	WC	9.3	49.0	27.3		9.4	24.1	37.9		9.7	56.4	15.4	
9.8	37 0.0	24.5		9.4	17.0	47.9		9.4	57.0	22.8		9.5	45.1	16.4		10	24 11.9	42.6	
9.0	2.2	50.7	M	9.7	42.3	1.0		9.5	59 23.2	47.4		9.9	55.8	59.5		9.6	28.6	38.6	
10	14.9	4.6		9.0	48 4.4	45.2	M	9.8	0 9.8	46.5		9.3	13 12.6	27.2		9.5	32.6	41.5	
8.9	18.0	25.2	M	9.1	5.8	23.3		9.5	15.5	43.3		9.5	14.5	3.9		10	55.1	0.1	
10	38.2	31.0		9.8	36.9	38.6		9.5	37.3	24.6		9.0	17.7	2.4		7.7	25 2.1	43.2	A
9.6	46.3	7.0		9.4	49 30.5	30.3		9.3	44.0	33.1		9.4	22.1	3.0		10	42.7	4.0	
9.6	59.8	16.2		9.1	39.4	43.7		8.9	1 11.4	34.0	M	7.3	35.2	24.7	A	9.7	44.4	55.2	
9.5	38 14.1	42.2		9.8	47.0	1.5		9.8	37.2	44.7		9.4	43.2	31.5		9.5	45.6	32.6	
9.8	19.6	44.0		9.2	48.5	59.0	M	9.0	39.0	38.9		9.8	43.4	48.2		9.7	49.1	17.1	
10	20.7	34.6		8.0	58.2	38.3	A	9.5	2 2.2	20.0		10	56.0	41.1		9.2	54.4	41.1	A
9.5	26.5	6.4		9.5	50 1.3	4.8		9.8	6.9	38.1		10	56.8	59.4		9.8	26 16.4	29.0	
8.0	52.6	10.8	A	8.8	27.0	39.3	A	9.8	12.1	7.7		8.2	14 5.6	48.2	A	9.6	28.3	18.6	
9.8	39 6.7	41.4		9.3	32.1	37.3		9.4	27.3	16.4		9.5	25.2	16.4		9.8	32.7	33.8	
10	17.8	27.5		9.5	35.6	8.9		9.4	40.5	34.5		9.5	39.8	2.3		10	40.6	34.2	
9.4	19.7	6.5		8.0	37.8	18.5	WZ	8.0	52.2	22.5	A	9.3	41.0	35.2		9.5	48.4	8.9	
9.3	23.5	31.8		9.5	46.3	48.5		9.3	3 3.9	58.0		9.8	46.8	42.8		9.3	49.0	18.9	M
9.4	24.6	56.4		6.5	58.2	35.9	A	9.5	6.3	41.4		9.4	15 15.6	49.8		9.7	58.2	36.2	
9.3	30.7	21.2		9.5	51 3.6	27.4		9.8	8.9	36.0		9.4	37.0	18.4		9.6	27 13.7	16.4	
9.5	39.6	55.9		9.7	15.0	38.7		10	24.5	4.5		9.5	50.5	46.7		9.8	21.1	30.2	
9.0	51.7	22.8		9.2	25.1	28.6		9.8	30.3	49.7		8.1	50.6	30.4	B	9.4	33.2	35.4	
9.8	58.0	29.8		8.7	29.8	9.5	A	9.8	39.1	29.8		9.6	55.6	17.3		9.4	33.9	3.0	
9.8	40 12.8	20.0		9.1	52 8.1	53.8		9.3	41.4	40.0		9.3	16 16.3	15.8		9.3	37.1	33.4	WZ
9.5	16.2	43.2		9.5	29.9	52.6		9.0	4 4.4	53.0		9.3	40.6	54.9		9.2	38.1	8.3	M
9.6	20.9	58.8		10	37.3	0.8		9.8	18.7	50.5		9.5	51.4	22.3		9.7	29 7.2	11.6	
9.8	39.0	32.5		9.5	46.2	5.8		9.1	38.9	2.4		9.8	56.9	12.9		7.8	14.4	56.6	A
9.8	40.8	24.9		9.5	53 2.0	0.7		9.8	41.5	17.0		8.6	17 5.1	7.3	A	9.4	29.3	14.9	WZ
9.5	41 3.2	12.1		8.0	3.8	30.1	M	8.5	43.8	29.3	M	8.8	6.0	15.2	M	9.5	37.8	35.0	
9.1	37.9	35.4	WC	9.5	11.8	40.6		9.2	54.0	33.9		9.7	11.9	2.5		9.3	46.9	3.9	
9.7	59.5	15.6		9.5	12.6	28.3		9.5	5 18.9	39.7		9.8	34.8	7.3		9.5	58.8	37.9	
9.5	42 3.1	50.0		9.3	16.5	21.0		9.4	31.4	50.0		8.5	55.2	55.3	CZ	9.9	30 17.0	15.4	
9.6	24.5	1.4		10	23.0	38.2		9.5	38.8	48.6		9.3	18 1.3	23.5		9.1	19.6	49.5	A
9.8	28.0	29.0		9.5	34.7	31.3		9.4	41.9	40.0		9.8	5.2	34.9		9.8	31.0	24.6	
9.8	32.2	47.5		9.3	40.3	32.5		7.5	45.6	28.4	M	9.5	15.0	41.4		9.5	45.4	36.8	
9.5	33.5	16.4		10	54 21.3	29.7		var	57.0	24.9		8.3	45.3	26.9	M	9.5	31 24.7	23.0	
9.0	53.2	45.1	M	9.6	23.5	13.5		9.4	6 2.1	28.9		9.1	19 12.7	29.8		9.6	49.5	7.0	
9.4	54.6	33.9		9.5	33.3	30.5		9.3	36.8	16.4		8.0	35.2	29.8	A	9.2	51.4	4.8	
10	56.7	54.0		9.5	43.6	40.0		9.8	53.4	35.5		9.6	20 0.9	3.7		9.3	32 0.1	13.4	
9.4	43 4.6	30.6		10	43.7	16.8		9.5	7 3.5	33.6		9.3	18.9	46.6		10	5.2	2.8	
9.6	15.2	5.8		6.8	55 8.2	59.7	A	10	44.8	52.0		9.5	19.8	29.4		9.0	5.2	7.8	A
9.3	44.0	34.8		9.0	15.9	51.7		9.1	47.0	14.7		9.1	23.9	48.6		10	12.0	22.4	
9.5	44.4	42.4		9.0	31.0	22.9		10	8 3.6	47.3		9.7	43.5	23.1		9.8	36.0	26.0	

5322: 51°55 35′35″3 B_1, Ep. 1883.65
5373: nach Peters (A. N. 99.2360); ist möglicherweise auch im grössten Lichte < 10

5501—5560				5561—5620				5621—5680				5681—5740				5741—5800			
	20h	—22°			20h—21h	—22°			21h	—22°			21h	—22°			21h	—22°	
m	m s	′		m	m s	′		m	m s	′		m	m s	′		m	m s	′	
9.8	32 53.5	37.8		9.0	46 1.8	0.2	A	9.5	2 38.5	16.0		9.2	16 41.4	16.2		9.6	32 11.6	13.5	
9.2	59.0	21.3		9.4	9.1	1.7		9.9	3 21.2	57.9		9.0	17 6.7	39.5		9.0	39.1	49.5	A
9.9	33 3.1	6.2		9.0	15.4	22.9	A	9.0	48.8	29.1	WZ	8.3	26.4	16.8	A	9.5	52.9	59.0	
9.2	8.9	49.0	M	8.5	26.5	38.7	A	9.4	50.7	39.8		8.8	27.3	8.0	A	9.2	33 9.0	32.3	
9.3	34.9	59.1		9.1	33.7	51.8	M	9.4	4 12.0	8.3		8.3	59.0	26.8	M	7.8	17.9	35.2	A
9.1	35.1	48.5		10	42.7	17.4		9.3	16.3	22.0		9.1	18 0.4	30.9		8.0	21.5	18.9	P
9.5	34 15.2	14.0		8.3	54.0	40.5	A	9.7	40.6	13.2		9.7	2.5	26.4		9.5	37.9	49.5	
8.8	40.8	28.6	WZ	9.5	54.9	35.0		9.0	5 25.1	41.2		9.7	5.8	9.8		9.4	34 7.6	55.4	
9.9	45.9	9.7		9.2	47 41.8	27.8		8.8	33.7	39.0	A	10	34.1	12.8		9.0	12.7	25.0	WZ
8.9	54.9	49.2	A	9.0	45.6	39.0	M	7.0	41.4	48.1	A	9.4	43.3	45.8		9.6	29.2	4.1	
7.5	59.3	57.9	A	9.1	48 17.9	25.3		9.3	57.4	2.0		8.2	19 57.4	20.6	B	9.5	35.3	46.0	
10	35 13.5	5.8		7.5	28.3	33.1	A	10	6 5.6	48.1		5.7	20 27.1	26.1	L	9.6	35 16.3	48.5	
9.4	21.7	0.9		9.0	55.1	10.9	A	9.5	29.4	1.4		9.0	29.5	33.5		9.5	45.4	37.7	
9.1	29.0	46.5	A	9.5	49 9.3	29.0		9.0	32.5	24.8		9.3	39.4	16.6		9.7	51.8	18.7	
9.8	36 3.5	45.0		10	11.5	3.6		7.7	44.5	24.6	B	9.4	47.8	49.5		9.5	36 39.8	27.9	
8.9	8.0	7.4	A	8.3	24.5	6.7	A	10	45.5	27.2		8.5	52.9	35.3		8.8	37 9.6	32.2	A
9.5	52.8	16.3		9.8	40.3	32.8		9.9	7 15.0	26.2		8.9	21 29.4	38.7	A	9.5	19.2	13.6	
9.2	55.1	46.8	WZ	9.3	44.7	40.9		8.0	35.2	2.0	A	9.5	22 15.9	40.9		9.7	23.1	22.4	
9.8	37 9.9	21.6		9.9	53.7	9.5		8.9	53.1	46.4	A	9.8	18.8	18.6		9.6	42.4	24.9	
9.2	11.7	52.1		9.8	50 7.6	17.4		9.9	8 7.1	11.2		9.4	28.6	56.7		9.8	38 17.4	8.6	
9.4	21.8	10.1		10	23.9	9.5		8.9	9.9	30.6	WZ	9.4	41.9	12.1		9.8	17.8	14.4	
8.0	43.7	15.6	WZ	9.6	58.8	38.0		10	15.6	54.8		9.3	23 2.0	59.7		9.3	19.3	47.7	
5.9	45.3	1.9	M	8.7	51 35.6	10.0	A	9.7	15.6	14.4		9.5	15.1	30.4		9.8	36.2	26.0	
9.7	57.0	58.5		8.8	48.5	53.4	A	10	24.1	56.0		9.3	17.0	34.6		8.7	56.6	19.9	WZ
9.1	58.6	16.8		9.8	52 34.5	0.5		9.2	45.2	23.3		7.8	17.7	38.6	B	9.8	39 5.9	14.1	
8.0	38 3.2	41.1	A	9.0	54.3	0.5	A	9.2	46.6	10.8		9.4	35.7	3.2		9.2	41.8	1.2	M
9.2	5.9	12.6		10	53 2.4	59.8		8.8	57.3	40.8	M	9.5	24 1.4	39.6		9.5	40 14.7	16.4	
9.4	10.9	57.4		9.5	22.2	48.2		8.1	58.7	20.3	WZ	9.8	8.8	0.7		9.1	18.0	20.5	WZ
9.3	21.0	45.0		9.7	40.1	14.7		9.4	9 15.6	0.1		8.3	25.3	24.9	B	9.7	25.4	28.0	
9.1	21.8	46.4	WZ	9.8	45.0	44.5		8.3	18.1	12.1	M	9.3	39.7	31.4		8.7	32.8	47.8	M
9.2	28.4	26.0		9.0	54 12.9	53.1	A	9.7	22.0	27.3		9.4	25 11.7	30.4		9.6	54.3	29.6	
9.0	48.4	28.2	A	8.2	40.3	32.1	A	10	24.5	28.0		9.2	19.2	54.4	A	8.4	41 12.1	40.0	A
9.0	39 2.5	16.4		9.8	54.6	2.0		9.5	41.9	34.5		9.0	23.6	17.9	M	9.8	12.3	51.0	
9.6	3.1	12.6		10	57.6	12.4		9.0	42.1	38.9	M	8.5	25.5	36.5	WZ	9.1	29.4	28.8	
9.9	20.3	39.0		8.4	55 3.3	6.3	A	10	10 5.0	58.0		9.5	26.7	33.2		9.4	40.3	52.2	
9.3	34.3	41.9		9.4	19.6	44.3		9.6	21.8	42.9		9.4	55.7	54.5		8.8	42 14.6	53.3	
10	48.6	9.8		9.4	28.5	52.6		9.8	25.2	9.1		9.9	26 6.8	57.6		9.8	59.4	51.0	
8.9	40 2.8	36.1	A	9.7	31.2	17.2		8.3	34.4	38.3	A	9.5	29.4	26.2		9.3	43 2.9	21.0	
10	19.0	20.0		9.7	55.1	45.0		9.4	37.3	42.0		9.7	52.4	8.8		8.3	13.6	25.7	M
9.5	28.7	56.5		9.3	56 2.0	44.6		10	43.6	53.1		9.0	59.1	42.0	A	9.5	22.3	1.5	
9.5	29.4	22.7		9.1	40.5	19.5	M	9.4	11 12.6	52.3	WZ	10	27 17.7	46.7		9.7	54.7	38.8	
8.8	42.8	9.7	A	9.5	54.6	9.3		8.7	27.5	32.2	A	9.5	35.5	24.5		9.7	44 8.5	41.1	
9.6	45.3	21.1		9.4	57 3.5	43.4		9.4	34.0	58.0		10	40.3	12.5		9.5	28.6	23.7	
8.5	41 25.2	25.7	A	9.7	36.0	52.2		9.8	35.8	10.9		9.2	28 22.7	56.8	A	9.0	48.2	33.5	
9.7	43.3	3.6		9.5	58 3.6	51.9		9.6	42.5	1.7		9.0	28.9	28.6	A	9.1	45 27.5	37.3	M
9.4	42 20.6	6.3		9.1	16.9	34.8	M	9.3	46.7	2.0		7.8	31.3	8.7	B	8.6	27.6	24.1	WZ
9.0	39.2	9.6		9.6	47.5	21.8		9.3	12 20.9	11.4		9.3	39.6	4.7		9.4	31.8	33.0	
9.3	47.4	31.9		9.8	59 1.9	37.5		8.2	23.4	59.8	A	10	29 6.8	53.6		9.5	52.7	22.1	
9.3	47.9	13.2		9.1	6.5	33.5		9.0	45.4	3.8	A	9.0	12.9	48.3	A	9.5	46 28.8	30.6	
9.8	50.5	58.3		9.4	10.1	28.1		9.8	13 2.7	52.2		9.4	29.7	2.8		9.5	31.7	47.8	
9.0	43 3.1	27.7	A	9.3	18.1	5.7		9.8	24.7	4.4		9.8	38.5	32.5		9.5	50.1	16.2	
10	43.7	28.3		7.8	34.1	54.8	A	9.1	39.7	8.5		9.8	46.0	48.7		9.1	47 14.4	59.7	B
9.8	44 20.0	37.7		9.1	34.3	15.3		9.5	56.0	39.4		9.6	30 13.9	33.6		9.8	59.3	51.8	
10	35.8	3.9		7.8	0 16.2	15.4	A	9.4	14 13.1	32.7		9.3	40.6	9.4		8.5	48 21.8	47.5	A
9.8	38.6	34.8		9.2	29.6	32.0		10	21.6	46.5		7.5	45.5	21.7	A	9.0	27.8	27.0	
8.9	59.3	29.9	A	9.5	1 3.0	16.2		9.7	44.4	8.6		9.4	57.8	57.3		9.1	55.4	42.5	
8.5	45 12.1	58.1	A	9.4	8.7	49.6		9.1	44.9	44.0	WZ	9.7	31 3.2	12.1		9.4	49 8.7	56.6	
9.1	12.8	49.4		10	23.6	4.3		9.2	15 57.1	40.3		9.7	37.7	10.8		9.5	8.7	52.8	
9.3	55.2	56.2	M	9.5	43.5	9.8		9.0	16 4.8	28.7	WZ	8.7	42.6	49.0	A	9.0	21.2	57.5	CZ
9.5	58.7	38.6		9.8	56.1	38.0		9.6	8.0	22.3		9.7	32 5.3	16.3		9.6	27.8	8.4	

5691: 56ᵐ.74 20′38″.9 B_4, Ep. 1871.66 5746: 21ᵐ.60 19′5″.8 B_1, Ep. 1871.65

5801—5860				5861—5920				5921—5980				5981—6040				6041—6100			
21h—22h		−22°		22h		−22°		22h		−22°		22h		−22°		22h—23h		−22°	
m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′	m	m	s	′
9.2	49	29.1	5.7	9.5	5	13.3	25.4	9.3	20	58.1	20.9 WZ	9.3	35	3.8	55.0	8.9	51	41.6	38.9
9.5		48.0	59.1	8.3		49.8	58.4 A	9.5	21	41.0	9.2	7.0		7.7	24.8 A	9.4		52.1	52.3
9.5		55.9	2.5	10	6	3.8	39.1	9.5		44.1	24.4	9.5		11.5	11.5	9.0	52	34.2	24.1
9.9	50	11.3	5.2	8.0		5.6	7.4 A	9.0		48.1	54.1 A	9.5		12.4	13.3	9.4		53.7	38.0
9.4		16.9	10.5 R	9.8		13.7	17.0	9.5	22	14.0	6.4	10		45.8	50.7	8.9	54	15.1	37.3
9.6		25.4	29.3	9.4		35.3	25.5	9.5		14.3	0.1	9.8	36	4.8	47.7	10		34.8	15.0
9.1		49.0	18.7	9.6		55.3	2.2	9.8		45.6	48.6	9.1		49.3	45.8	9.3	55	6.0	13.4
9.2	51	17.5	48.1	9.7		57.9	56.7	9.3		57.7	39.0	9.0	37	6.4	34.9 WZ	9.1		42.2	23.6
9.1		39.0	24.6	9.4	7	16.6	53.2	9.8	23	43.7	13.0	9.3		15.4	56.4	9.7		46.8	54.0
9.8	52	1.6	15.7	9.5		50.4	48.9	8.8		47.2	38.1 WZ	9.5		35.3	19.4	9.1		47.0	27.8 WZ
9.8		5.3	33.6	9.1	8	1.1	0.9 A	9.1		54.1	43.2 WZ	9.5		37.4	8.7	9.4	56	28.8	45.7
10	53	6.0	22.4	9.4		16.2	52.9	9.4	24	0.6	48.1	9.6	38	3.4	47.4	9.2		48.4	17.6
9.8		15.5	21.7	9.3		26.9	38.2	9.2		7.0	20.7 WZ	9.0		4.0	58.0 CZ	9.2		54.3	0.7
9.5		37.6	7.7	10		28.1	46.8	9.6		33.7	5.4	9.6		19.0	9.7	9.3	57	11.9	50.6
9.2		42.9	19.6	10		36.5	48.1	9.5		50.3	30.1	10		52.5	1.8	10		16.6	4.7
8.7	54	6.6	48.2 A	9.8	9	9.7	17.9	9.6	25	9.8	24.5	9.4	39	11.5	51.9	9.9		21.9	35.3
9.7		19.4	0.0	9.8		19.6	6.9	9.1		30.3	40.0	9.1		32.5	37.0 WZ	9.6		25.2	15.2
9.6		28.5	8.1	9.5		56.6	12.5	8.5		56.8	51.2 A	8.8		51.1	58.4	9.4		36.6	18.9
10		35.4	7.7	8.8	10	14.3	8.9 A	9.3	26	2.8	33.0	8.8		53.6	54.8 WZ	9.1		36.7	31.5
9.7		49.5	13.0	9.7		23.0	17.7	9.6		15.3	53.4	9.6		56.0	2.9	9.8		56.5	28.0
9.9		53.2	59.6	9.5		24.1	52.4	9.8		20.5	37.9	8.3	40	15.0	23.5 A	8.7	58	28.4	43.4 A
8.5	55	22.1	23.8 A	9.1		55.6	58.0	9.2		33.8	5.8	9.9		31.1	28.4	9.7		47.2	3.7
9.3	56	1.3	29.6	10	11	17.8	12.8	9.9		36.3	37.7	9.5	41	18.8	21.3	9.8		57.6	13.2
8.0		5.2	28.5 A	9.4		42.0	50.9	8.8	27	10.9	49.8 WZ	9.4		27.6	22.7	8.5	59	9.5	14.0 A
9.8		13.3	22.0	9.4		44.5	50.0	9.3		33.7	11.6	9.4		48.8	21.7	9.3		18.3	9.4
9.5		21.8	32.8	9.5		53.5	26.1	9.3	28	18.2	26.4	9.3	42	31.4	20.9 WZ	9.2		26.0	26.2
9.0		45.3	59.7 B	8.9		57.1	2.8 A	9.0		20.1	25.7 WZ	9.7		31.9	13.7	9.4		39.0	56.9
8.5		48.8	56.5 A	8.0		59.5	44.3 A	9.5		27.4	50.0	9.5	43	41.4	49.2	9.4		59.2	12.1
9.3	57	25.8	28.8	9.8	12	18.1	41.4	9.5		27.9	45.5	9.2	44	1.7	41.5	9.5	0	4.3	49.7
9.4		54.4	20.7	9.4		28.2	32.7	10		35.5	11.3	9.8		20.3	45.7	9.5		8.8	55.8
9.4	58	2.9	56.5	9.4		36.7	30.9	8.6		36.0	20.0 A	8.0		33.3	28.3 A	9.4		17.0	44.3
9.3		43.3	47.3	9.8		44.6	23.0	9.5		52.1	29.8	9.8	45	1.4	7.3	9.2		28.4	29.1
6.8	59	9.9	57.0 A	9.0	13	1.6	22.3 WC	8.9		55.1	16.7 A	9.8		25.8	31.7	8.7		32.1	23.1 WZ
9.0		13.9	47.6 WZ	9.4		2.3	54.1	9.1		58.5	25.1	9.5		31.8	50.0	10		54.1	34.6
9.5		42.2	59.0	8.8		9.1	21.2 B	9.9	29	1.9	28.5	9.7		32.5	27.4	9.8		59.0	36.2
8.0		47.1	17.6 A	9.2		22.7	3.5	8.3		40.0	32.9 A	9.7		45.8	54.2	9.1	1	3.9	5.5
10	0	0.0	33.1	5.7		36.1	19.1 B	9.6		44.0	15.9	10	46	7.1	47.5	9.5		7.6	50.4
9.0		37.9	23.7 A	9.9		51.2	39.0	9.8	30	21.1	55.3	9.1		8.9	42.4 WZ	9.5		11.8	45.7
9.5		46.0	58.6	9.0	14	44.2	54.3 A	9.5		37.0	58.0	8.8		16.1	6.1 WZ	9.1		24.9	48.3
10	1	5.4	3.1	10		54.5	15.1	8.6		47.2	24.2 A	9.6		17.4	21.2	9.5		56.3	8.6
9.5		24.1	21.1	9.4	15	12.2	47.5	9.2	31	9.7	17.7	9.0		20.9	56.7 CZ	9.9	2	28.6	48.5
10		41.4	53.2	9.8		42.3	2.6	8.9		45.6	56.8 A	9.2		42.0	9.2 WZ	9.5	3	13.1	16.4
9.5	2	1.1	47.2	9.0		54.3	38.4	10	32	3.3	43.1	9.4		45.9	6.7	9.0		13.9	23.2 WZ
9.5		4.2	7.8	7.5	16	10.9	19.6 A	10		4.2	37.8	9.5	47	34.8	48.5	10		35.5	7.9
10		7.0	19.7	8.5		22.4	59.3 A	9.5		23.1	5.5	9.9		55.4	24.4	9.5		49.5	47.6
9.0		11.9	50.6 WZ	9.7		52.8	55.9	9.3		27.8	49.3	9.5	48	12.7	58.3	8.5		59.3	31.4 WZ
9.5		13.4	22.5	9.8	17	14.8	3.3	9.5		30.3	33.4	10		13.0	18.4	9.6	4	39.0	37.0
9.2		22.1	38.0	9.2		27.4	45.9	9.5		35.8	16.0	9.8		20.0	47.6	8.0	5	3.1	43.5 WZ
10	3	15.6	48.8	9.8		36.9	35.8	9.5		53.2	46.5	10		34.5	2.6	9.1		33.3	11.0
8.3		19.2	55.0 A	8.5		38.5	20.0 A	9.8	33	2.3	59.0	9.3	49	15.5	49.8	9.5		53.1	45.4
9.2		21.6	55.8	9.6		45.4	31.8	10		6.6	54.5	9.5		18.8	29.6	9.6		56.0	16.9
9.0		44.0	5.2 A	9.3		51.2	31.6	9.4		25.2	38.5	9.6		57.3	45.2	9.6	6	13.3	17.7
10		58.7	1.6	9.3		56.3	13.9	10		33.0	56.1	10		57.5	0.4	8.8		56.2	23.1 WZ
9.0	4	44.3	12.7 A	9.3	18	53.1	19.5	9.8		51.0	24.4	8.5	50	11.2	48.0 A	9.2	7	6.6	56.3 CZ
9.5		46.5	5.2	9.8	19	49.0	3.1	9.4	34	2.7	22.4	9.6		12.6	40.7	9.1		13.6	55.1 CZ
9.5		47.7	23.7	8.0		53.5	36.5 WZ	9.0		14.8	31.7 WZ	9.6		16.1	38.6	9.5		23.7	34.4
9.5		48.4	21.1	9.2	20	22.5	59.6	9.9		25.4	29.1	9.4		23.1	44.3	10		52.2	30.3
8.9		51.8	11.6 A	10		27.9	42.8	10		27.5	26.1	9.5		40.0	21.0	9.8		54.2	42.4
9.3	5	3.0	1.9	9.5		31.0	22.2	9.7		47.5	5.4	9.2		58.5	17.2	9.0		57.4	38.1 WZ
8.2		8.2	7.3 A	7.8		50.0	48.6 A	9.5		53.2	31.1	8.9	51	40.7	56.1 A	8.8		57.8	6.6 A

6101—6130

	23h		−22°	
m	m	s	′	
9.4	8	6.8	4.8	
9.5	9	13.8	51.5	
9.7		20.8	20.0	
10		20.9	1.7	
9.3	10	1.3	59.0	
9.8		14.8	54.9	
9.7		33.6	9.9	
8.3	11	8.4	55.6	A
10		17.5	31.0	
9.5		48.9	32.5	
9.5	12	30.4	16.4	
9.5		47.5	29.0	
9.8	13	13.6	52.7	
8.7	15	18.2	19.4	WZ
9.3		22.9	0.6	
8.8		27.4	6.3	A
9.4		42.6	16.1	
9.3		57.1	32.5	
6.8	16	24.7	33.9	B
8.0		59.8	46.9	CZ
8.2	17	9.0	14.1	A
9.6		22.8	6.3	
9.5		23.3	50.1	
9.2		33.2	50.4	
8.5		53.8	26.9	A
10	18	17.3	31.2	
8.8		35.4	13.4	WZ
6.5		56.4	31.9	A
10		59.9	15.1	
8.8	19	24.3	52.3	A

6131—6160

	23h		−22°	
m	m	s	′	
8.9	19	25.8	0.8	A
9.4		35.4	53.8	
10		53.8	50.0	
9.6	20	38.9	45.4	
8.7	21	3.2	15.8	WZ
8.0		35.0	56.8	B
8.9		54.9	58.5	
7.3	22	37.1	41.2	A
8.3		53.6	48.3	A
9.7	24	5.2	37.7	
7.0		5.5	9.8	A
7.8		12.7	2.9	A
8.2		32.7	36.0	WC
9.4		49.2	42.9	
9.0		58.1	56.6	A
8.0	25	14.2	29.6	WZ
9.5		31.0	15.3	
9.8		34.7	58.9	
9.8		56.3	36.9	
9.8	27	5.3	24.0	
9.0		25.4	34.7	WZ
9.0		26.8	39.6	A
9.6		43.3	32.4	
8.6	28	9.9	31.7	A
8.5		22.4	27.0	A
9.7		23.7	4.6	
9.6		30.9	2.6	
9.5		47.8	6.6	
9.9	29	5.0	37.5	
8.5		20.4	50.7	A

6161—6190

	23h		−22°	
m	m	s	′	
8.1	29	27.5	28.6	A
9.5		28.4	40.0	
9.7		41.5	6.1	
9.5		54.0	44.4	
9.7	30	15.1	17.5	
9.4		21.6	19.5	
9.1		50.0	58.2	
8.3		53.1	28.4	A
9.0	31	18.5	7.2	A
7.2		41.6	43.4	A
10	32	3.2	25.5	
9.2		5.1	33.8	
9.6		32.9	53.2	
9.6		34.0	51.7	
9.5		43.7	47.6	
9.4	33	23.5	40.0	
9.8		36.7	41.0	
9.4		50.2	25.4	
7.8	35	50.8	30.8	A
9.0	36	21.3	52.1	
9.1		53.3	59.7	
8.9	37	13.9	53.7	A
9.0		51.8	4.2	WZ
9.0		54.9	39.6	A
9.1		59.4	25.2	
9.4	38	3.4	37.3	
10		10.5	4.2	
9.1		21.5	4.7	
9.0		28.4	42.0	
9.1		48.5	38.7	

6191—6220

	23h		−22°	
m	m	s	′	
8.5	39	37.9	18.6	A
8.3		43.3	34.7	WZ
9.3		58.3	19.6	
10	40	18.0	59.0	
9.5		27.1	19.9	
9.1		28.0	43.4	
9.8		37.5	43.6	
9.8		56.1	29.0	
6.8	41	56.6	24.7	A
9.5		56.8	9.0	
9.5	42	16.2	49.0	
9.1		25.7	42.9	
10		39.7	43.4	
9.8		54.8	1.9	
10	43	4.8	9.1	
8.8		15.2	8.3	
9.9		39.2	55.4	
9.4	44	16.3	27.0	
9.3		17.2	54.9	
9.4		22.2	2.4	
10		34.2	10.4	
9.1		56.6	2.8	
9.7		59.6	45.2	
9.7	45	9.4	23.7	
7.8		26.6	16.9	A
9.6		31.3	4.8	
8.5	46	14.9	25.6	B
9.9		25.9	0.8	
9.8	47	18.0	35.6	
9.9		18.4	24.4	

6221—6250

	23h		−22°	
m	m	s	′	
9.8	47	41.2	39.0	
6.8		42.2	11.2	B
9.7		44.5	6.8	
9.1		44.5	25.8	A
7.0	48	38.1	47.9	A
9.0	49	6.6	25.8	A
9.4		29.1	9.1	
9.9		50.1	41.8	
8.5	50	1.2	27.0	A
9.5		18.9	58.5	
9.5		19.2	9.9	
8.5		41.1	42.5	A
9.7		43.7	47.6	
9.4		50.7	58.3	
9.0		56.7	42.5	A
9.8	51	12.1	16.3	
9.7		12.8	40.0	
9.4		15.3	6.8	
9.6		32.3	18.5	
9.5	52	33.3	30.0	
9.7	53	4.4	4.1	
9.8		9.0	19.8	
9.9		22.0	41.7	
9.7		22.1	51.2	
9.2		32.8	27.5	
8.6		47.6	12.6	W
9.1	54	6.0	56.8	
9.4		17.9	50.8	
9.8		47.7	6.4	
9.5	55	1.4	54.8	

6251—6254

	23h		−22°	
m	m	s	′	
8.3	55	18.0	42.0	WZ
9.2		20.1	2.8	
9.5		28.4	1.6	
10		38.6	5.7	

6255—6258

	23h		−22°	
m	m	s	′	
10	56	48.5	7.7	
9.6	57	20.3	2.9	
7.4		55.4	7.3	A
9.4	58	3.1	37.2	

6259—6262

	23h		−22°	
m	m	s	′	
9.3	58	30.2	28.1	
9.8	59	3.2	6.6	
8.5		7.1	18.3	A
9.5		31.6	59.1	

6263—6265

	23h		−22°	
m	m	s	′	
8.4	59	36.7	38.1	A
9.3		42.8	5.4	
9.4		48.2	50.2	

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